DRUG & COSMETIC INDUSTRY

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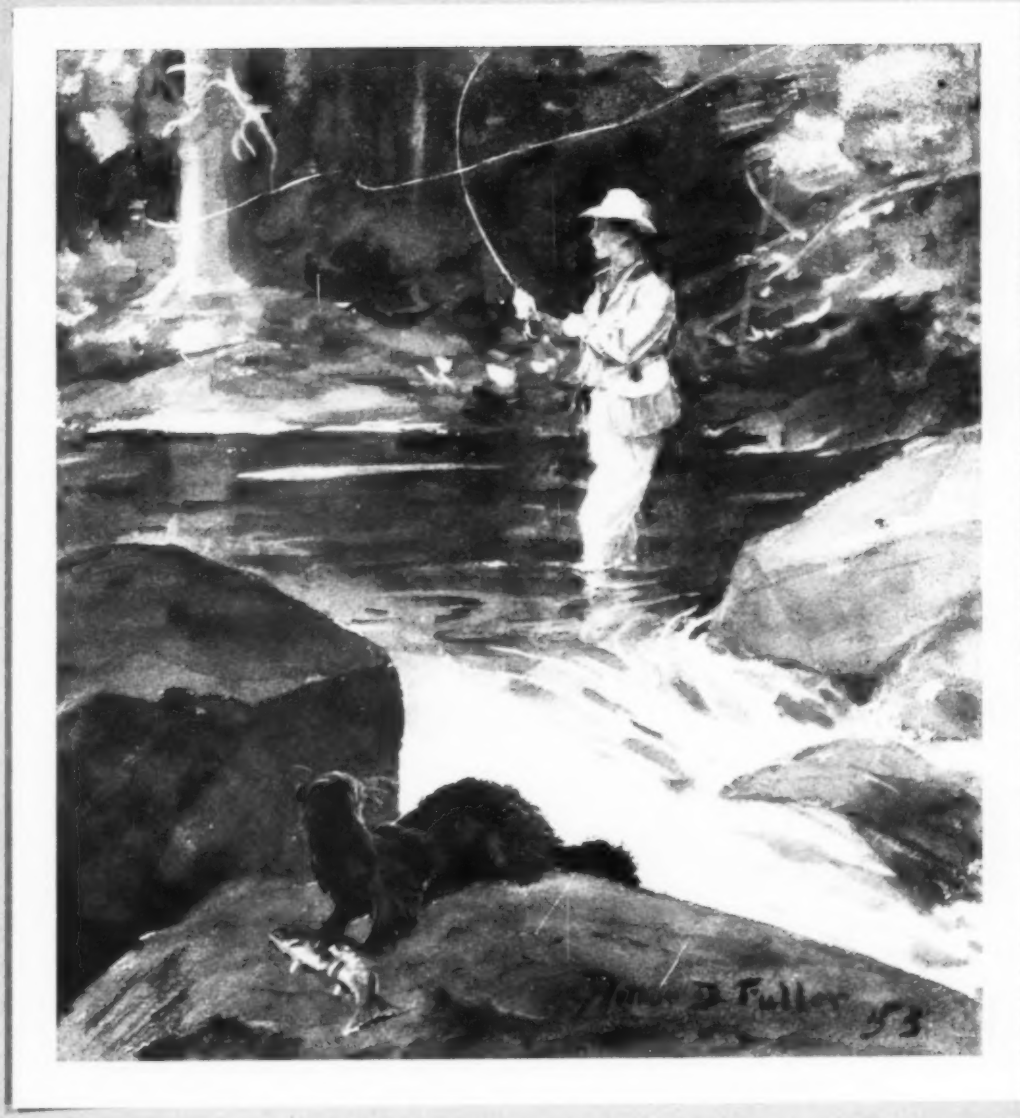
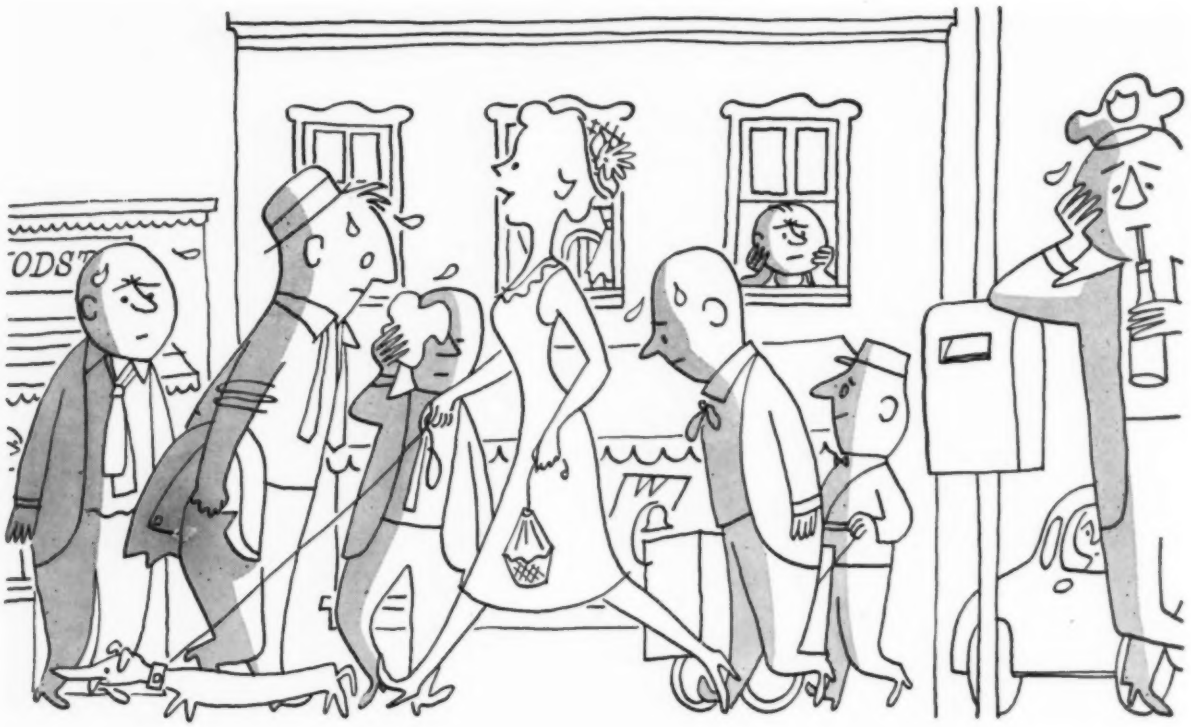


June 1953

When she makes it a rule to look cool



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DRUG & COSMETIC INDUSTRY

JUNE, 1953

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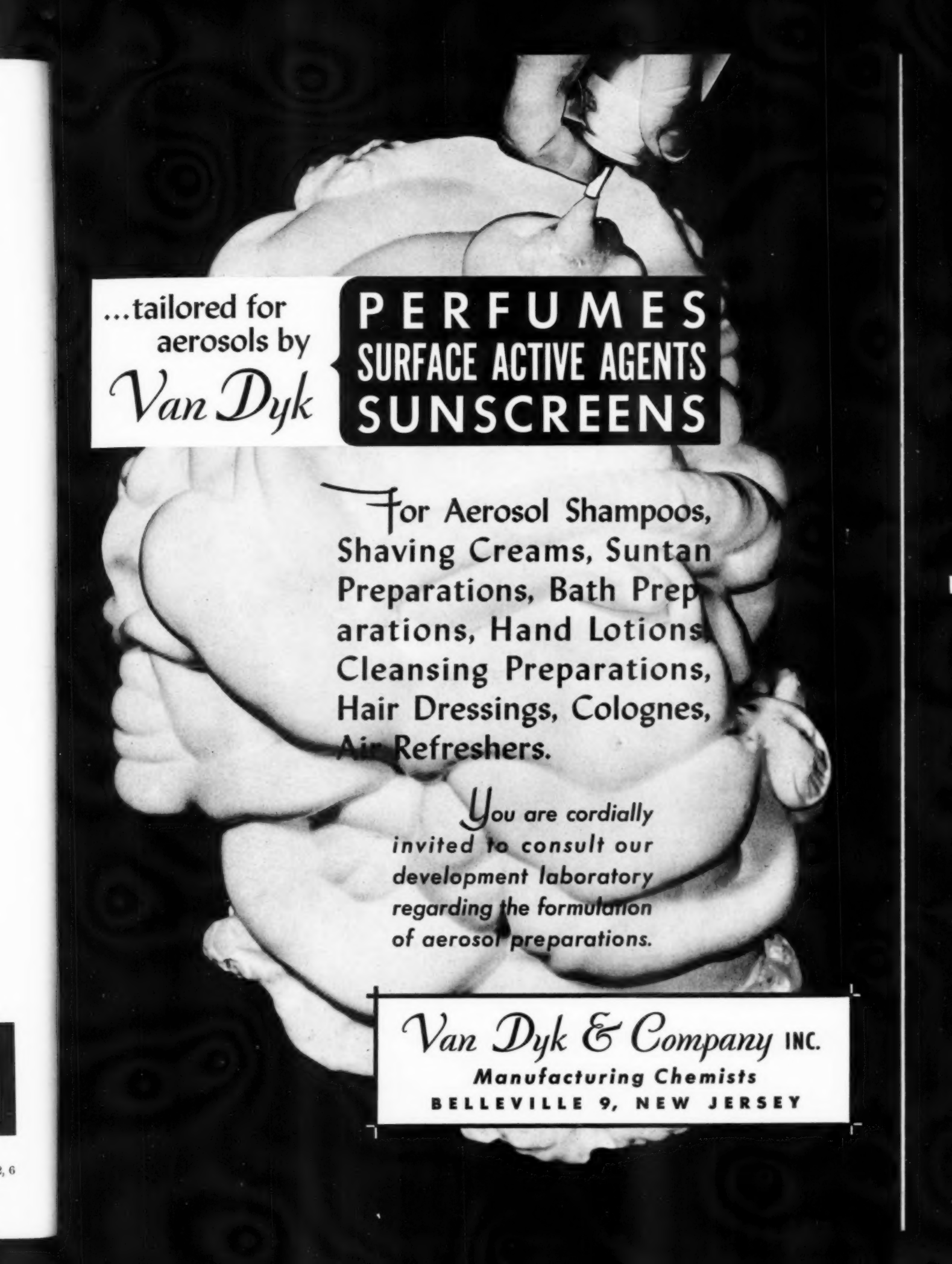
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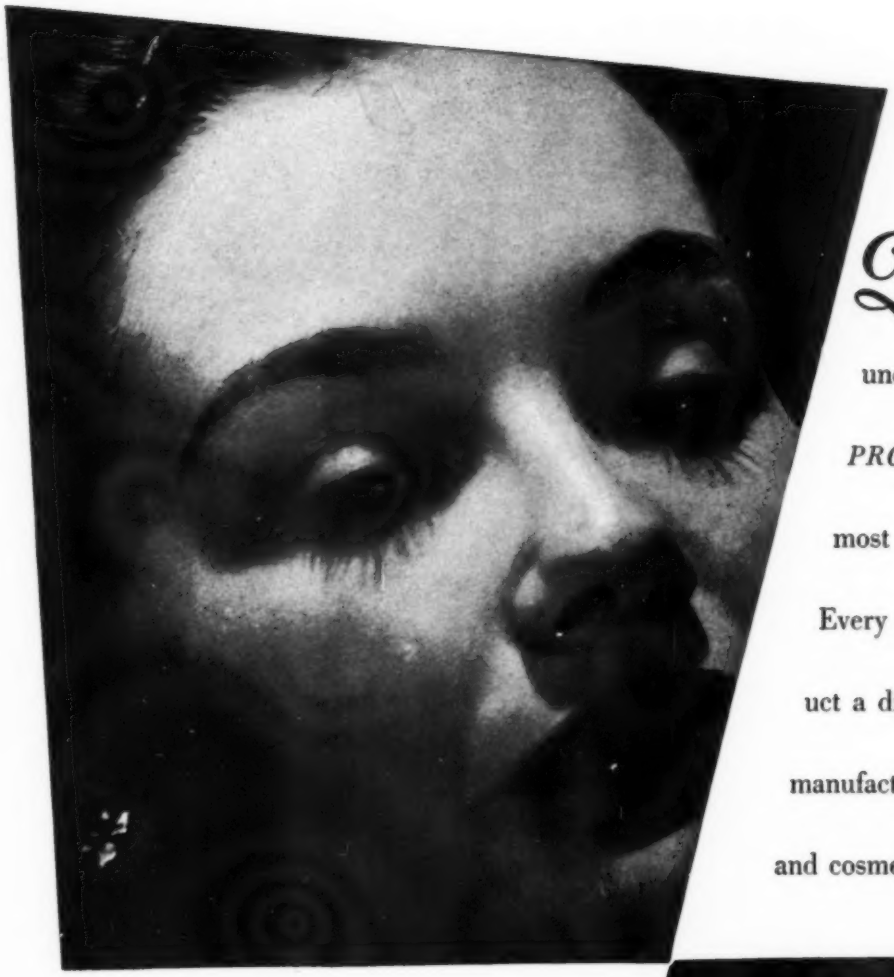

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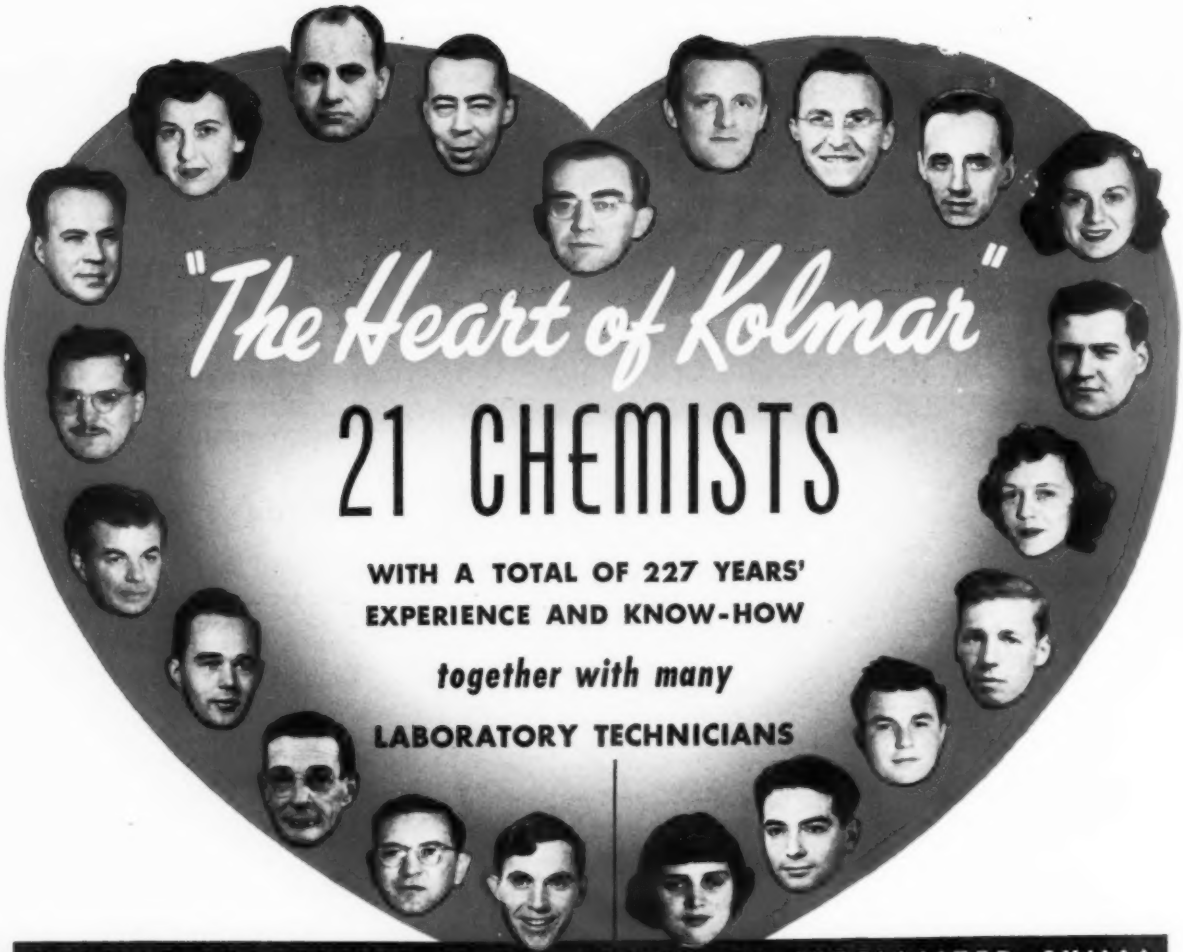

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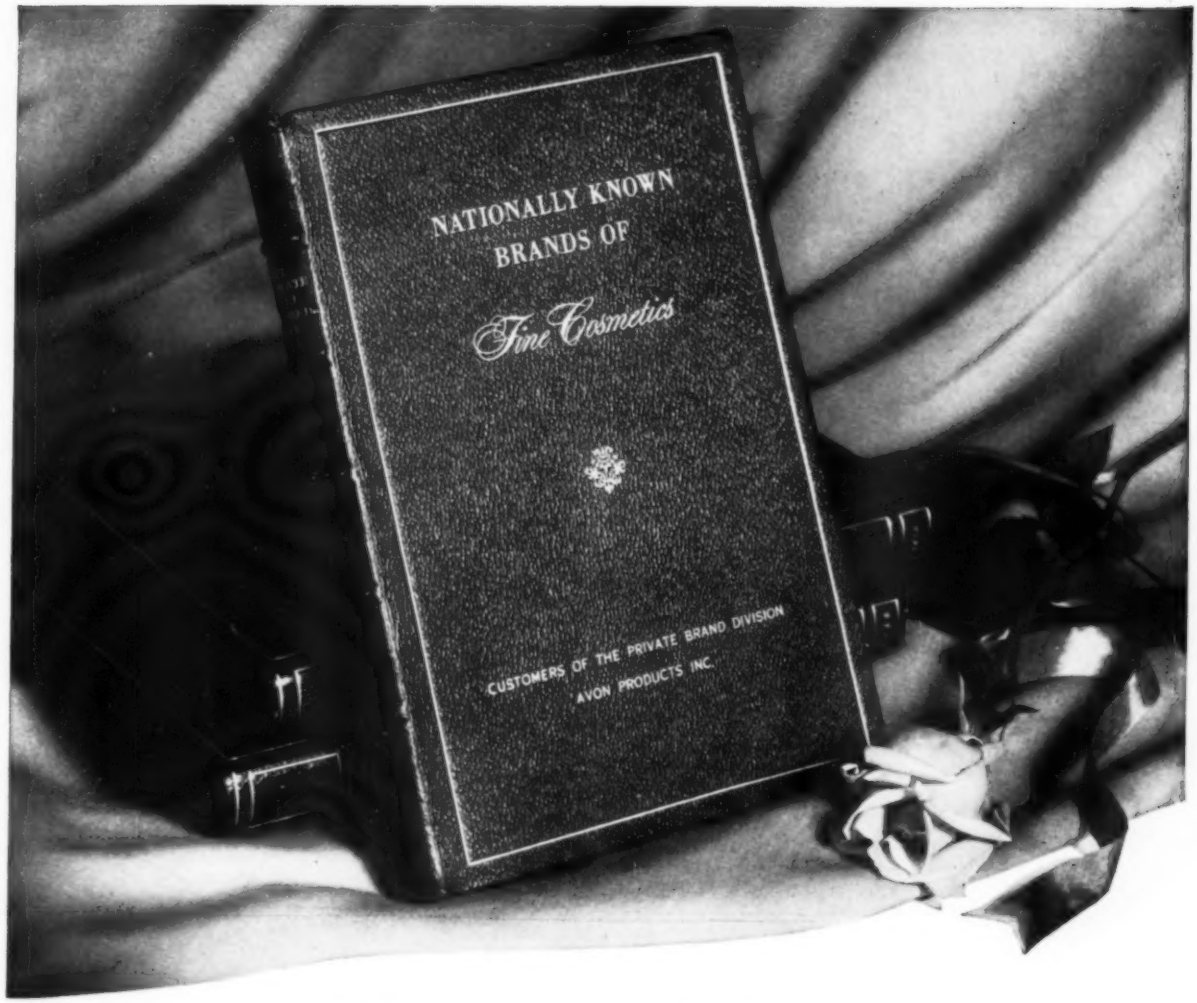

It pays to go by the book!

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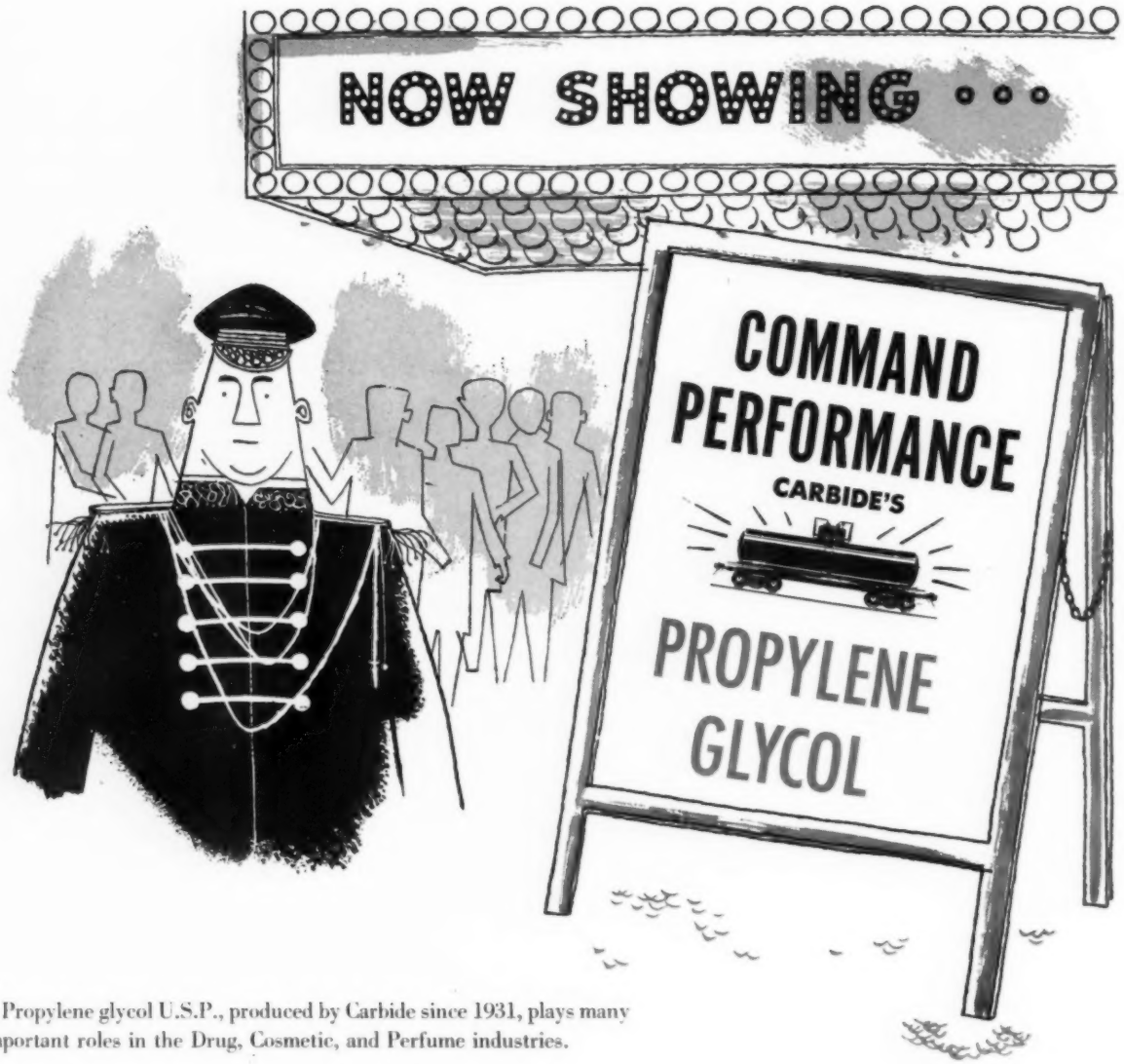

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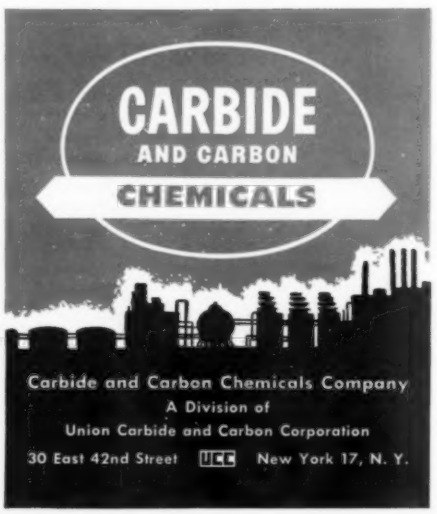

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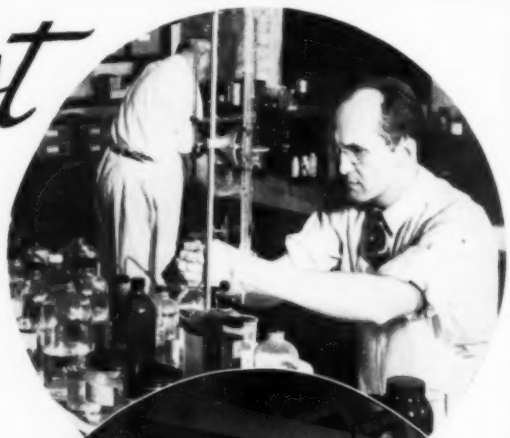

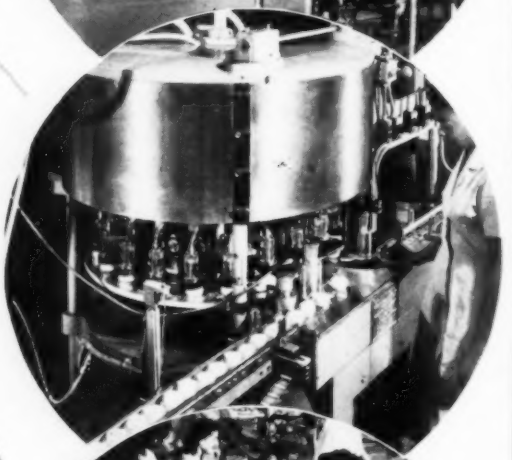

IN the highly competitive cosmetic merchandising field, it is well for the cosmetic manufacturer-distributor to explore every possible means of reducing costs.

For example, what are the facts as to costs, advantages and safeguards in entrusting all or certain parts of your production, warehousing and distribution to a private brand manufacturer?

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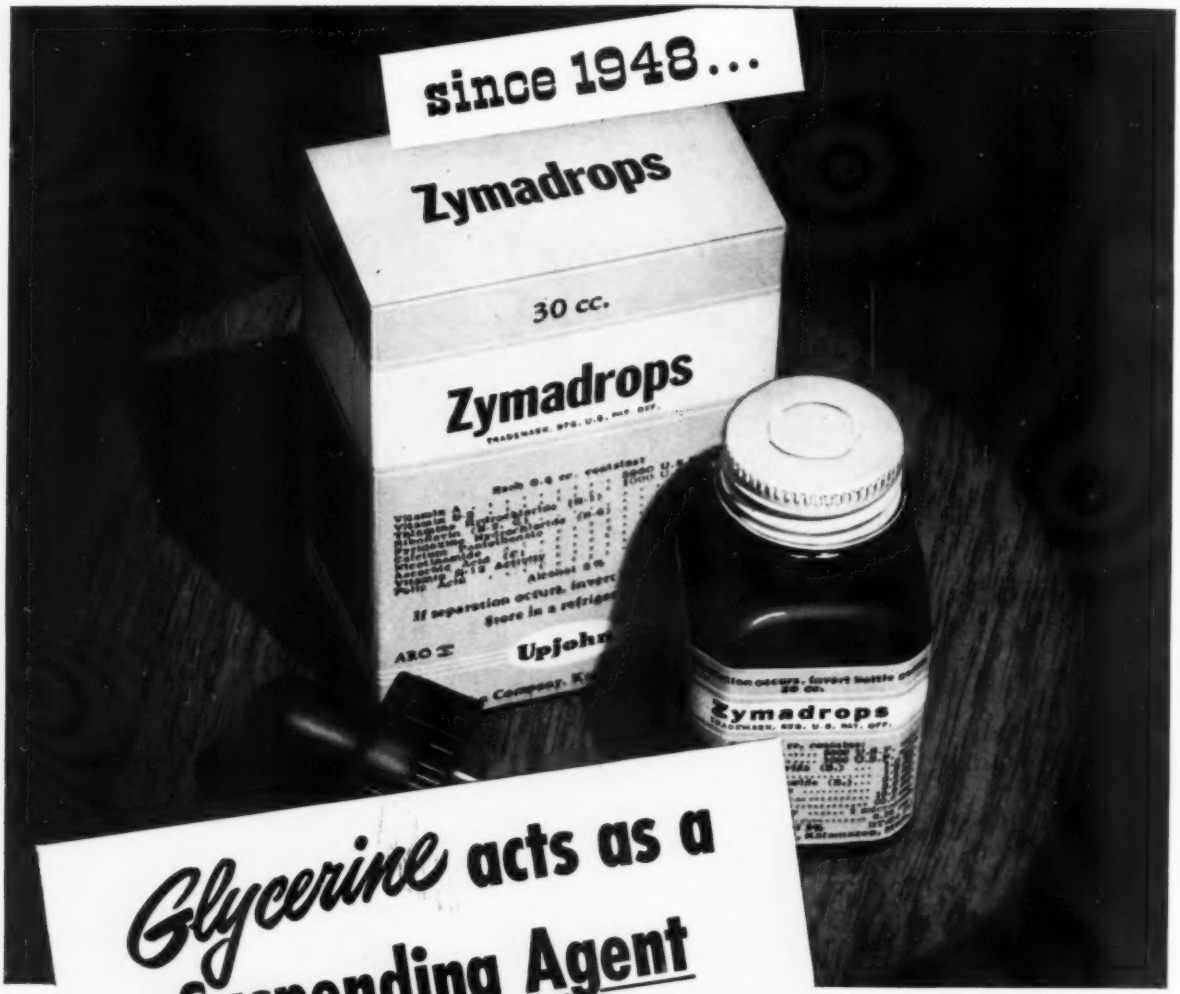

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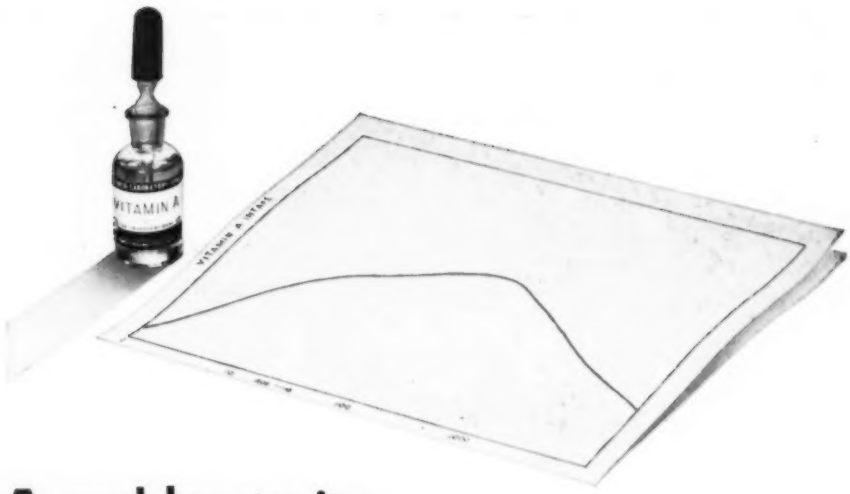

Vitamin A and longevity

There *is* correlation between longevity and vitamin A intake—at least a correlation that is statistically significant with rats.

With no vitamin A whatever there is trouble. If this were not so, vitamin A would never have been discovered in the first place. At a level of 0.8 U.S.P. units of vitamin A per Calorie of food intake, a rat grows fairly well and shows no signs of xerophthalmia. In fact, one laboratory rat family was reported thriving in the 67th generation at this level, but doubling this level seems to do something for the individual rat, if not for the race. In males it increases the span of life about 5 per cent and in females about 10 per cent.

A second doubling stretches the life span another 10 and 12 per cent respectively, and, what's more, in some ways it's a better life. The reproductive life of the female rats is extended more, proportionally, than the length of life itself.

But, alas, the conclusion that vitamin A must be the elixir sought by the alchemists is unjustified. A maximum in the curve there must be, but it is still a little vague.

Such scientific work we point out for its possible interest to our vitamin A customers in the pharmaceutical and food industries. We are also anxious to help them with any problems that arise in the formulation and utilization of vitamin A in their products. Our business is to supply natural and synthetic vitamin A for production requirements in a wide range of potencies.

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APPROXIMATE CHEMICAL COMPOSITION	AAB %	ABL %	AB %	ABH %	AAAR %
Caproic C6	—	—	—	—	—
Caprylic C8	2.0	1.5	1.0	1.0	1.0
Capric C10	4.0	3.5	3.0	3.0	2.0
Lauric C12	90.0	70.0	60.0	60.0	45.0
Myristic C14	2.0	13.0	18.0	18.0	22.0
Palmitic C16	—	8.0	7.0	7.0	11.0
Stearic C18	—	1.0	1.0	8.0	2.5
Oleic C18	2.0	3.0	7.0	3.0	11.0
Linoleic C18	—	—	3.0	—	5.5
Linolenic C18	—	—	—	—	—
APPROXIMATE CHEMICAL DATA	**AAB**	**ABL**	**AB**	**ABH**	**AAAR**
FFA	139-144	138-141	126-132	126-132	116-126
TITRE °C	37.0 Min.	30.0 Min.	24-28	29	30.0 Max.
IODINE VALUE	3.0 Max.	5.0 Max.	8-16	3.0 Max.	14-22
ACID VALUE	277-287	275-281	251-263	251-263	232-253
SAP. VALUE	277-287	275-281	251-263	251-263	232-253
COLOR	15.0/2.0	20.0/3.0	20.0/3.0	15.0/2.0	35.0/5.0

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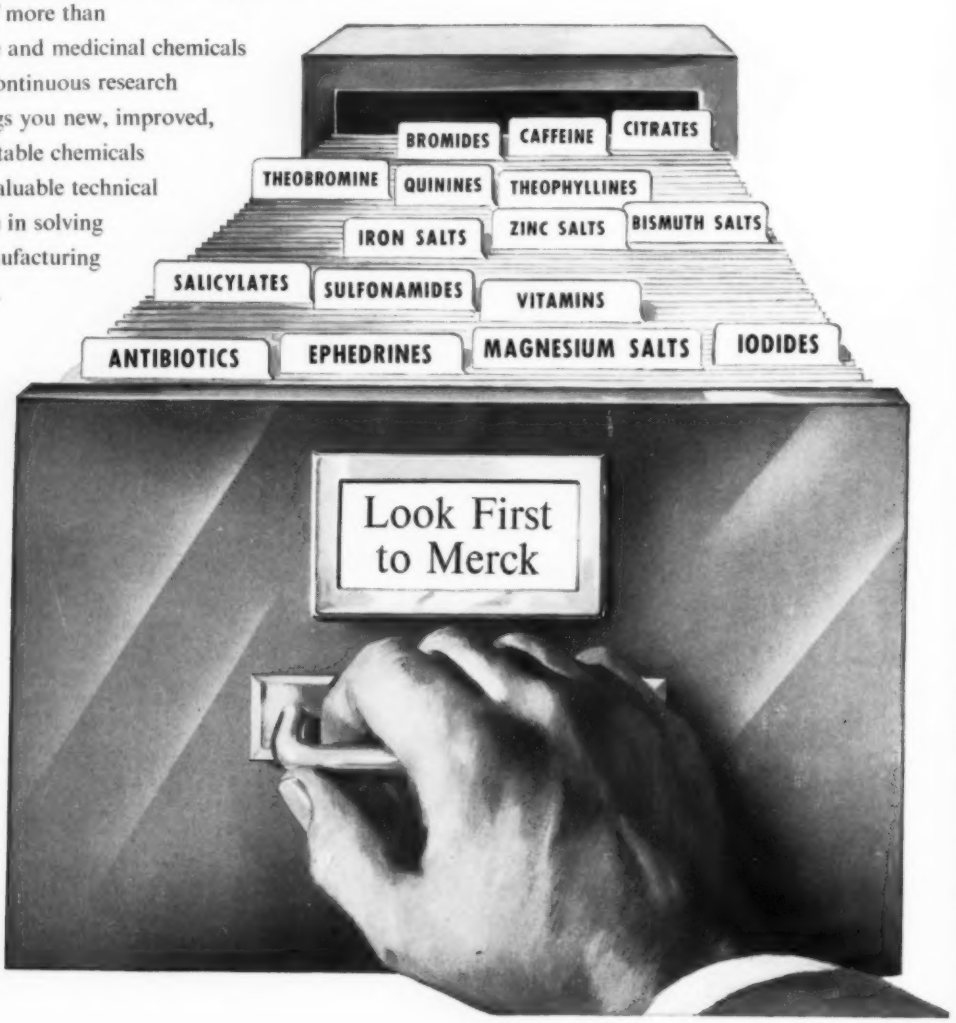

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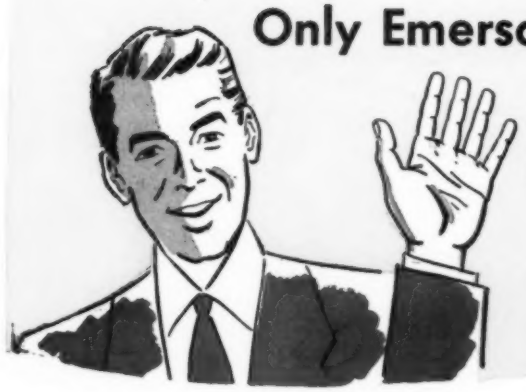

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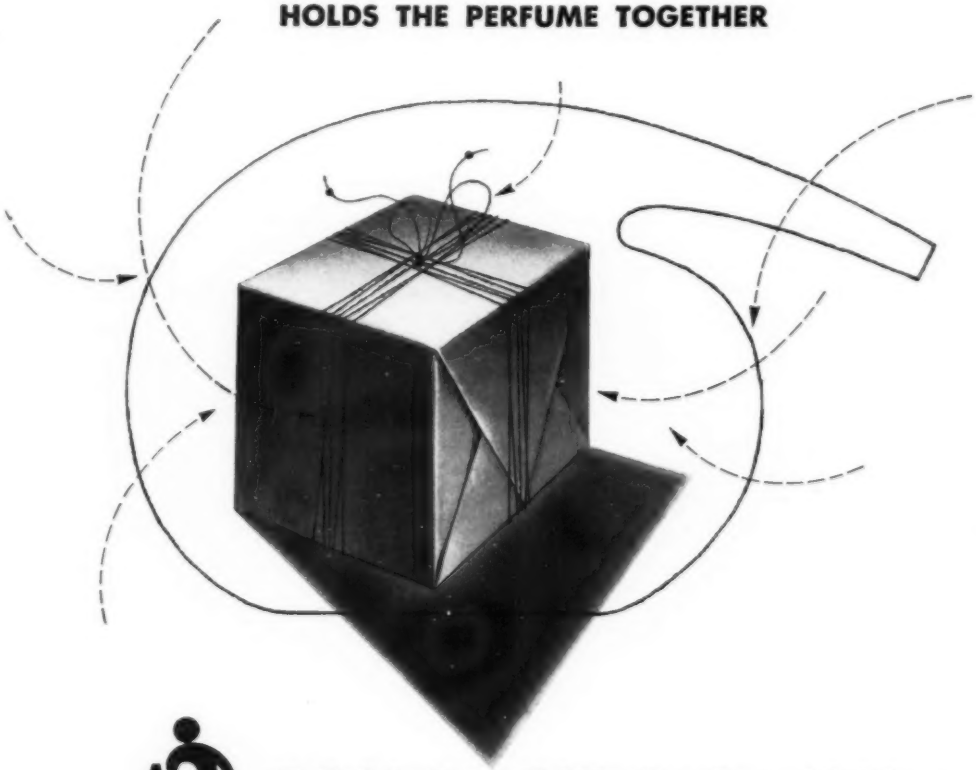

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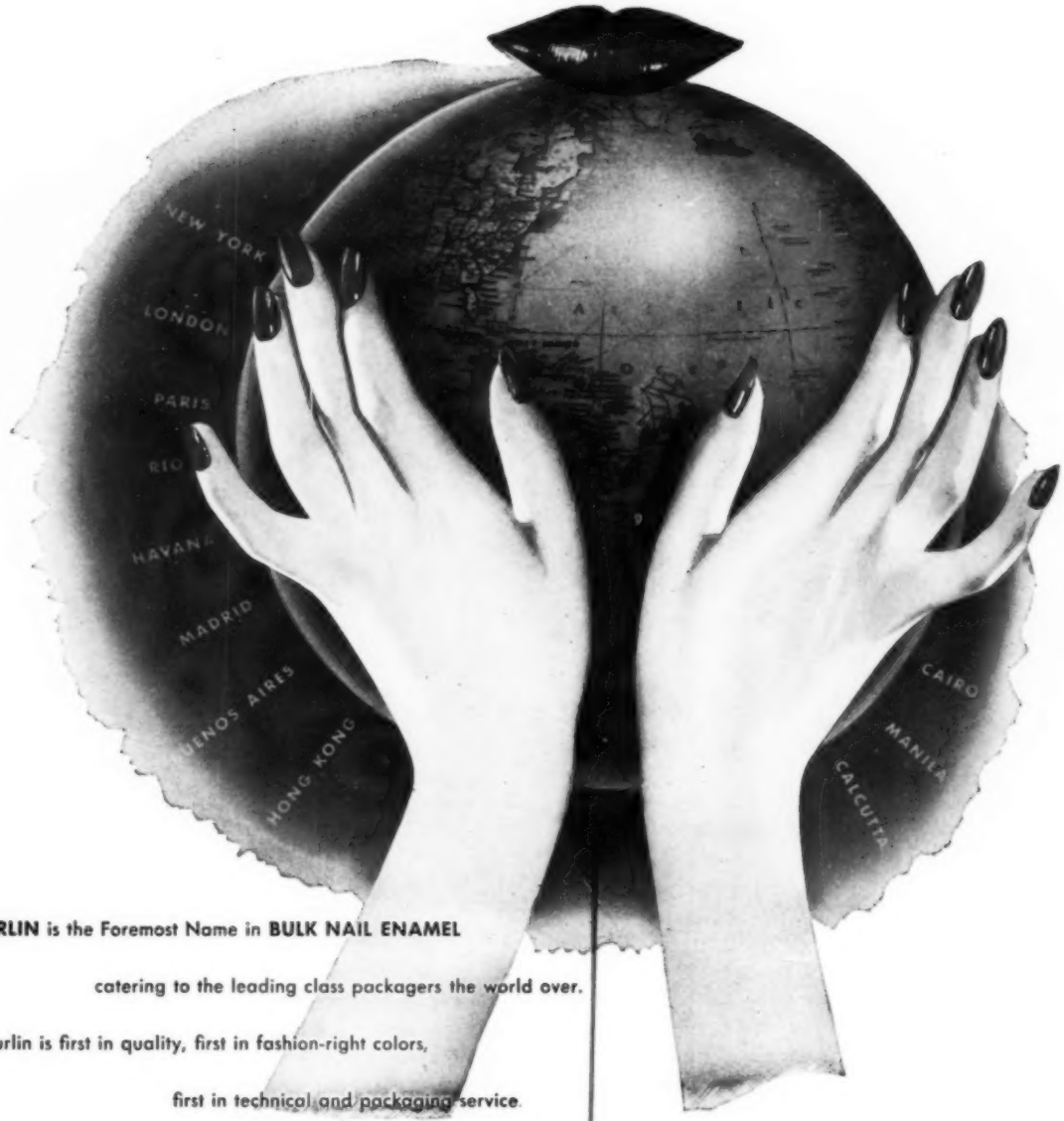

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FOR THE PHARMACEUTICAL INDUSTRY •
SINCE 1867 •

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"He's the vice-president in charge of competitors' merchandising policies."

Keeping Posted

Sydnor Barksdale Penick

The sudden passing of Sydnor Barksdale Penick removes from the drug industry one of its most outstanding members. Mr. Penick's influence was felt throughout all branches of the industry since he devoted a very large part of his time and energy to those endeavors which were solely for the advancement of the drug industry as a whole, quite apart from his own business interests.

His wisdom, his vision, his industriousness, his humanity and his friendliness, in addition to his many other fine characteristics won him a host of friends and admirers throughout the industry. He will be sorely missed.

Coumarin Withdrawn As Flavor

The four manufacturers of the flavoring material, coumarin, have withdrawn this material from the market for that use. The manufacturers discovered evidence that this product is damaging to the liver of animals, and even though the material has been in use for more than seventy years, they presented this evidence to the Food and Drug Administration and informed the FDA that they were withdrawing the product.

The FDA immediately informed all distributors and users of the product and released a statement to the press. The release closed with the following paragraph: "Withholding coumarin is regarded as a precaution in the interest of public safety even though neither the industry nor the Food and Drug Administration knows of any case of human illness traceable to the flavoring agent.The Food and Drug Administration commended the members of the chemical industry for their action in the public interest."

Glass Container Output Sets Record

Glass container sales for the first quarter of 1953 broke all previous records with a total of 29.8 million gross. This is approximately four per cent above the first quarter of 1952. While the increase in shipments of glass bottles and jars was general in all lines, there were especially sharp increases in demand for food containers, drug, chemical and household ware, and the beverage group including liquor and wine bottles.

Per capita consumption of glass bottles and jars was 16 in 1900, 58 in 1940, and 101.6 containers per person in 1952.

Gallusin Claims Stopped

In a stipulation filed with the Federal Trade Commission and signed by Abe Marks, trading as the Sumlar Company, Brooklyn, advertising claims that Gallusin will afford relief to gall baldder sufferers, or will curb or otherwise have a beneficial effect on gall bladder conditions, are prohibited. Other claims stopped are that the product stimulates flow of bile, has any beneficial effect except to temporarily relieve occasional constipation, or is new and amazing and affords remarkable results.

Lilly Adopts New Hours

Eli Lilly & Company has adopted permanently its present working hours of 7:30 a.m. to 4:15 p.m. which were voted into effect six months ago for a trial period. This permanent adoption of these working hours was the result of another vote taken at the end of the six-month trial period in which more than 80 per cent of Lilly employees favored these hours. Originally only 70.6 per cent voted for the trial. A two-thirds majority was necessary for the change.

F.T.C. Questions Claims

In a complaint issued against Scientific Living, Inc., Scranton, Pa., the Federal Trade Commission charges false and misleading advertising of Adolphus B-Complex Tablets, El Rancho Adolphus Pure Apple Juice Concentrate, Adolphus Herbal Laxative, Adolphus Imported Peppermint Tea, and El Rancho Adolphus Clover Honey.

Through their advertising, the complaint alleges that

the respondents have falsely represented (1) that Adolphus Imported Peppermint Tea sweetens the entire intestinal tract; (2) that El Rancho Adolphus Clover Honey is a cure for coughs and colds; and (3) that El Rancho Adolphus Apple Juice Concentrate eliminates mucus and toxins present in the body.

In their advertising for Adolphus B-Complex Tablets, the respondents allegedly represent not only that such symptoms and conditions as nervousness, neuritis, fatigue, insomnia, constipation, dizziness and vague aches and pains may be due to vitamin B_1, B_2 or Niacin deficiencies for which the preparation may be beneficial, but also that there is reasonable probability that such symptoms are in fact due to such causes and that the preparation will cure or relieve them.

Procaine Penicillin Patent

Eli Lilly & Company has won a Federal District Court decision against Schenley Laboratories for infringement of the Lilly patent on procaine penicillin. On May 14, the Court upheld the patent and enjoined Schenley for the full term of the patent from making, using, or selling procaine penicillin in any of its forms. The case was referred to a special Master to determine the amount of damages. The suit was filed in April 1951. Other suits are pending against Heyden Chemical Corporation, and J. T. Baker Chemical Co. All others making the product are under license from Lilly.

Schenley Laboratories have announced that an appeal will be taken from the above decision, and both Lilly and Schenley indicate that the final decision would have to come from the U. S. Supreme Court. An appeal bond of $75,000 was fixed to be posted by Schenley. Damages are not expected to exceed this amount.

Schenley did not contest the infringement allegation, but held that the Lilly process could not be patented. They claimed that the process was a scientific discovery in which no single firm could have monopoly control. Chas. Pfizer & Co. is co-owner of this patent with Lilly.

Yogurt Culture Claims Questioned

Advertising claims that Dr. Gaymont's Yogurt Culture is effective in treatment of stomach ulcers, acidity, stomach and intestinal disorders; is non-fattening, and is Nature's nearly perfect food are said to be false and misleading in an F.T.C. complaint. The complaint also charges that the company misrepresents that Dr. Gaymont's Instant Whey Powder is effective in treatment of colitis, and digestive ailments; insures sound teeth, strong bones and robust health; is non-fattening; and gives the user a glowing complexion and trimmer figure.

Fluoridation Supported by A.D.A.

The safety and effectiveness of fluoridation of public water supplies has been established beyond any reasonable doubt, according to the American Dental Association's Council on Dental Research and Council on Dental Health. In endorsing the program which is now in operation in 730 towns and cities throughout the United States, the Council on Dental Research emphasizes three points: (1) that "millions of people have consumed drinking water incidentally containing one part or more per million for generations without known deleterious effect;" (2) that investigations leading to development of the program are scientifically sound, and (3) that "continuous study by qualified investigators has emphasized the safety" of the procedure.

At the same time, the Council on Dental Health found that "a voluminous amount of scientific data accumulated over a long period has established beyond reasonable doubt the safety and efficiency" of the measure. One part fluorine per million parts of water is the amount found to be most beneficial for dental health, says the A.D.A. One study, made by three research scientists at the University of Rochester, was concerned with fluorides and bone structure and showed that drinking water containing one part per million fluorine could not have a harmful effect on bone tissue, even if all the fluorides in water consumed in a lifetime were stored in the bones.

In a second study, a Yale University School of Medicine scientist studied the relation of cancer to fluorides and reported that tumors transplanted into mice developed more slowly if the mice received fluorides.

Said the A.D.A. Journal: "The scientific evidence mounts monthly in favor of fluoridation, leaving to opponents of the process only vapid arguments based either on emotionalism or misinformation.

Lilly Identifies Products

Eli Lilly & Company is now supplying most of its pulvule specialties and all of its Enseals (Time Disintegrating Tablets, Lilly) in new forms that identify them as Lilly products. Lilly pulvules (filled capsules) have a new parabolic end which gives them a distinctive bullet-shaped appearance. The old pulvule was rounded on both ends. Lilly Enseals have had tiny, brilliant colored flecks of gelatin incorporated in the medicament as an identifying feature, and these confetti-like flecks are also found in tablets Mi-Cebrin (Vitamin-Mineral Supplements, Lilly.

Among the more widely used products supplied in parabolic end pulvules are Lextron, Becotin with Vitamin C, Prenalac, Reticulex, Seconal Sodium, and Bilron. Enseals, gelatin flecked, are being applied to many products among which are ammonium chloride, sodium salicylate, ferrous sulfate, diethylstilbestrol, potassium thiocynate, and the thyroid formulas.

Through national advertising attention is to be called to the use of these new identifying characteristics upon which patents are pending, so to acquaint physicians and pharmacists with the program.

It strikes us that the public had better be educated in this direction also as many times the doctor does not even see the product which he prescribes.

Luden's Menthol Cough Drops and F.T.C.

Luden's Menthol Cough Drops are the subject of a stipulation filed with the Federal Trade Commission. Advertising claims discontinued are that the menthol content of the product relieves colds, or relieves all symptoms of a cold, and that the cough drops contain more menthol than other cough drops.

Chlorpactin Making Bow

Chlorpactin, a product which has been under development by the Guardian Chemical Company, New York, is now making its appearance in the first of many finished products. Chlorpactin is hypochlorous acid (HOCl) in an anionic tail compound. Hypochlorous acid which is a very weak acid, weaker than carbonic acid, is almost neutral and very unstable. The acid breaks down into oxygen and hydrochloric acid, but a buffer is present to destroy the hydrochloric acid, and pH remains at 6.75. The product is a powerful germicide, a deodorizer, detergent, a wetting agent, and a mild bleach. It is said not to sting or burn when applied, and to destroy dead tissue while having absolutely no effect upon live tissue.

Various grades of the product are made for different uses. The first product being introduced is Foroxin, a preparation for athlete's foot. Other applications being investigated are dental, surgical, and in feminine hygiene. Still other possibilities are also being observed. Foroxin is being marketed directly by the Guardian Chemical Company. Other preparations may be marketed directly by the company, but licenses for the use of the material will also be granted to companies who wish to use it for a product in a particular field.

F.T.C. Drops Jeris Charges

In an initial decision by an F.T.C. examiner, issues as to advertising claims concerning the merit of Jeris Antiseptic Hair Tonic were dismissed. These claims included statements that the product is a cure for dandruff; that it will relieve itchy scalp; will prevent excessive falling hair; used with massage, it will stimulate the blood flow in the scalp to the extent that hair roots will be nourished; and that it will promote or cause healthy hair growth or will result in a healthy scalp.

The decision prohibits Ar. Winarick, Inc., New York, manufacturers of the product, from using the word "free" for any merchandise which is not in truth a gift, and which is contingent upon the purchase of other merchandise or the performance of some service. Also prohibited are representations that barbers are qualified for diagnosing or treating diseased conditions of the scalp.

The Chemical Industry

The Chemical Industry—Facts Book—First Edition, has been published by the Manufacturing Chemists Association, Woodward Building, 15th and H Streets, N.W., Washington 5, D.C. This book, of 110 pages, explains that the chemical industry has enjoyed a four-fold expansion since 1939 to a 1952 total of 18.66 billion dollars accompanied by sharp increases in jobs and output of products making possible improved foods, better public health and many comforts and conveniences.

Describing the basic importance of chemical manufacturing to all industry, the Facts Book notes that the chemicals and allied products industries are now among the six largest industries, and destined to grow more rapidly than the rest of industry in the next ten years. Led by synthetic organics for plastics, fibers, medicinal and agricultural chemicals, almost every industrial chemical has been in such demand since the end of World War II that chemical makers have spent more than 8 billion dollars for new plants and equipment—about 11 per cent of all industrial expansion. The book says "defense and civilian requirements will boost 1950 chemical productive capacity a third by 1955."

Among facts revealed in the book:

It takes seven to ten years to bring a new chemical product to market;

The research and development bill for a new insecticide or weed-killer averages a million dollars;

Per capita consumption of heavy chemicals such as ammonia and chlorine has skyrocketed. Average per capita consumption of sulfuric acid in 1951 was 177 pounds, compared to 73 pounds in 1939;

New medicinal chemicals have cut death rates for many diseases 43 to 76 per cent in 15 years;

Chemical plants are safe places to work. The industry's safety record is almost twice as good as that of industry as a whole;

Production of plastics and synthetic resins has grown ten-fold in 20 years, and is currently greater than any metal except iron and steel;

Man-made fibers today account for 20 per cent of all textile fibers;

Chemical companies engineer new plants to minimize discharge of wastes and are spending ten million dollars a year in older plants to eliminate pollution of the air and streams;

Chemical weed-killers save as much as ten cents a pound in the production of cotton;

Chemical fertilizers make farm yields the equivalent of 50 million acres of additional land.

Drug for Mental Diseases

The possibilities of the development of therapeutic agents for use in the treatment of mental diseases has always been of interest to us. In fact we have advanced the theory that something should and could be done along these lines on many occasions. In our opinion, the continual expansion of facilities for confining mental cases is a disgrace to our medical and pharmaceutical professions.

Now out of one of the cults of India comes knowledge of a practice known as Ayurveda. This knowledge comes from Dr. R. A. Hakim of the Civil and Mental Hospital of Ahedabad, India.

Dr. Hakim, as a practitioner who belongs to the Western School, had no high opinion of ancient Indian medicine up to 1950. Still, as a psychiatrist, he decided to test some ancient Ayurvedic drugs which had been prescribed for centuries in mental cases. He was supplied with six-gram tablets by a Bombay pharmaceutical house. These consisted of Brahmi (Monniera cuneifolia or Herpestis monniera), Shankhavali (Evolvulus alsinoides), Chandrika (Rauwolfia serpentina), Jeevanti (Leptadenia reticulata), Ugragandha (Acorus calamus), and Bhringarai-Bhangro (Eclipta alba).

All told, 146 patients were the subject of clinical experimentation. Among the lot were schizophrenics, manic depressives, senile psychotics and sufferers from puerperal insanity and vitamin deficiency, psychotic hysterics, hypochondriacs and epileptics. Some of the 146 patients were treated with electric convulsion

therapy, some with Ayurvedic drugs, some in both ways. Electric convulsion therapy gave a recovery rate of 31.11 per cent; treatment with Ayurvedic drugs alone, a recovery rate of 51.66 per cent; a combination of electric convulsion-Ayurvedic therapy, a recovery rate of 80.48 per cent for the 146 as a whole.

Whether or not these results of treatment of 146 patients mean anything, here is a clue that should be seized by psychiatrists in this country as well as by pharmaceutical manufacturers. The drugs used by Dr. Hakim are readily available from India. Here is a branch of medicine which has been sorely neglected by the medical profession and the pharmaceutical professions—at least as far as results are concerned. While the increasing expenditures for caring for these people in institutions is necessary at the present, it would seem that larger sums could be spent in the direction of discovery of therapeutic treatment for this type of disease. It might be that there are many closed minds on the subject of therapeutic treatment for the mentally ill. However, these minds can and should be opened.

Sterling Ups Prices

Sterling Drug, Inc. has increased fifty-one fair trade minimums on 19 proprietaries, bringing the average profit to Sterling's retail customers to 33 per cent when the items are sold at these minimums. The increases themselves average 10 per cent. Products on which retail minimum prices were raised include: Bayer Aspirin, Dr. Lyon's Tooth Powder, Mulsified Cocoanut Shampoo, Double Danderine, Lyon's Tooth Paste, Phillips' Milk of Magnesia—Liquid, Tablets, Tooth Paste, Cleansing Cream and Skin Cream; Haley's M-O, Energine Cleaning Fluid, fireproof; Chas. H. Fletcher's Castoria, Z.B.T. Baby Powder, Molle Brushless Shaving Cream, Modol, Ironized Yeast, Dr. Caldwell's Laxative, and Campho-Phenique—liquid.

In addition to increasing the retailers' profits by advancing the minimum prices at which these goods can be sold, three Sterling divisions—Bayer, Phillips, and Centaur-Caldwell—separately advised the trade that they are each inaugurating a Cooperative Newspaper Advertising Program "with our direct retail customers which, in effect, will provide for repayment, in part, of money spent by them for newspaper advertising" of certain products. Bayer products so covered are Bayer Aspirin and Dr. Lyon's Tooth Powder, both regular and ammoniated. Phillips products included in this arrangement are Phillips' Milk of Magnesia, liquid and tablets, and Haley's M-O. Centaur-Caldwell products are Fletcher's Castoria and Z.B.T. Baby Powder.

The cooperative newspaper program replaces the Display Advertising Contracts which each division has heretofore had with its direct retail customers.

Cease and Desist Against Pruvo

The Federal Trade Commission has issued a Cease and Desist Order against Pruvo Pharmacal Co., Milwaukee, prohibiting advertising that Pruvo, when taken by sufferers from arthritic, rheumatic or neurotic conditions, will reduce swelling or free joints of stiffness, or will result in any therapeutic benefits in excess of those afforded by an analgesic or antipyretic. Among other claims prohibited is that Pruvo may safely be taken by persons adversely affected by aspirin.

New Jersey Prescription Survey

Out of 62,538 new prescriptions surveyed in New Jersey, there were only five requiring the pharmacist to make pills extemporaneously, only 43 for tablet triturates manufactured by the pharmacist, and only 104 for suppositories, according to New Jersey Pharmacy Board Secretary W. E. Powers, who reports on a survey conducted by 124 pharmacy internes working in as many pharmacies. Other surprising facts revealed by Mr. Power are that there were only 211 prescriptions, or less than 0.4 per cent, for preparations for the hair and scalp; 465 prescriptions, or less than 0.8 per cent, for bulk powders; and 538, or approximately 0.9 per cent, for folded powders. Apparently even "ready made" suppositories are seldom written for today on prescription as only 516, or about 0.8 per cent of the more than 62,000 prescriptions classified, were written for this type of medication.

Pills and tablets of manufacturers were called for in 34 per cent of all prescriptions; 29.6 per cent were for liquids for internal use; 11 per cent were for capsules of manufacturers, while an additional 4.9 per cent, representing 3,068 prescriptions, were for capsules prepared in the pharmacy; preparations for use in the eyes constituted 2.3 per cent of the prescriptions; nose drops 5.1 per cent; ear drops 1.4 per cent; ointments 4.9 per cent; liquids for general external use 1.8 per cent; and miscellaneous 1.9 per cent. Mr. Powers further indicated that 26.4 per cent of all prescriptions required some compounding. This high percentage is due to the fact that these internes, obtaining experience for a pharmacist certificate, obtain their experience in pharmacies in which the emphasis is placed upon the professional aspects of pharmacy. No pharmacy is normally approved for internship unless it ranks in the upper half of pharmacies of the county in which it is located as far as the volume of prescription compounding is concerned and most actually in the upper fourth.

Record Number of Doctors

There were more physicians in the United States at the close of 1952—214,667—than at any other time in history, according to the American Medical Association. During 1952, 6,816 persons were licensed to practice medicine in this country for the first time. During the same period, 3,829 deaths of physicians were reported to the A.M.A., giving a net increase of 2,987. In 1951, the increase was 2,640. In the 18-year period from 1935 to 1952, 110,700 doctors have been added. This is the result of the increase in the production of physicians under accelerated programs in the medical schools, expanded facilities and the licensure of foreign-trained physicians.

Of physicians in the United States at the close of 1952, 151,363 were engaged in private practice, 6,677 were in full-time research and teaching, 28,366 were internes, residents, and physicians engaged in hospital administration, 8,166 were retired or not in practice, and 20,095 were in the government services.

The Crisis in Medical Education

by Ernest H. Volwiler
CHAIRMAN, DRUG AND PHARMACEUTICAL COMMITTEE
NATIONAL FUND FOR MEDICAL EDUCATION

No segment of our society has a greater stake in medical progress than American business—especially the drug and pharmaceutical industry. Our industry should be especially concerned, therefore, to learn that the supply of doctors and medical scientists on whom continued medical progress depends, is threatened at the source.

Our 79 medical schools, the foundation of the nation's health structure, are faced with growing annual deficits which may force them to curtail their teaching and research programs.

The effects of these deficits already are being felt. Faculty vacancies remain unfilled. Full-time instructors are being replaced by part-time men. Training in areas of recent scientific progress cannot be undertaken except at the expense of established programs.

Thus, at a time when the country is calling for *more* doctors and industry for *more* researchers and medical directors, the schools are finding it difficult to keep from falling behind—not only in the number of graduates, but in the quality of training.

In an attempt to halt this threatened decline, the National Fund for Medical Education is spearheading a campaign for private support. Through its Committee of American Industry, headed by Colby M. Chester, honorary chairman of the General Foods Corp., the Fund is appealing to America's corporations for $10,000,000.

The success or failure of this appeal—and the consequent course of medical education—will affect every corporation and every community in the country.

Our industry has a special interest in the promotion of health and in a continuing supply of competent physicians, medical scientists, researchers and other professional personnel.

Many corporations contribute regularly to local causes: hospitals, schools, community chests, the Red Cross, cancer and heart drives and others. Industry's record speaks for itself. But no local hospital or health agency could function for one day without the doctors and medical personnel trained by the medical schools. They train the hands and brains that translate the local dollar into community benefits.

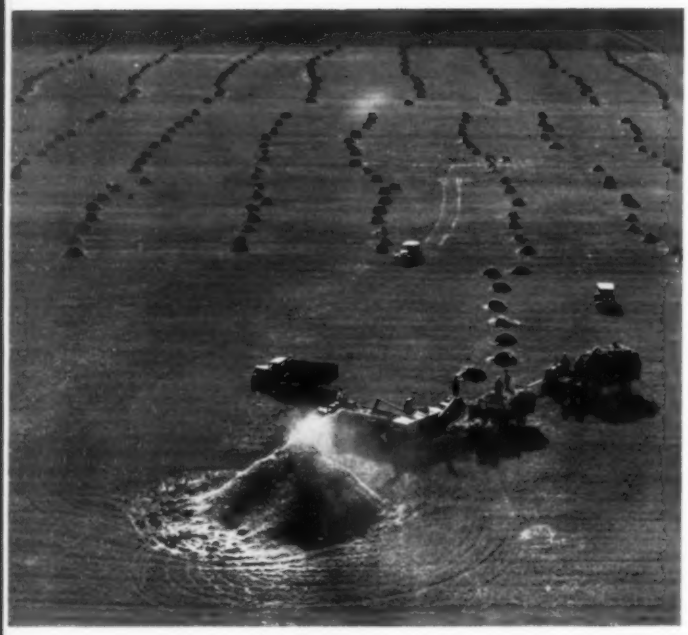
There is further issue: private versus government support. If industry lets the schools down, they will have no choice but to rely extensively on federal subsidies, described by President Eisenhower as "a perilous alternative" to private support.

This appeal is a test. If business really means what it has been saying for 20 years—that it is opposed to government control of our traditionally free institutions—it will accept this issue as a challenge and meet it head on.

(Contributions to this Fund are exempt from federal income tax. They should be sent to The National Fund for Medical Education, Attention: Drug and Pharmaceutical Division, 2 West 46th Street, New York 36.)

Many Million Dollars More

by Frazer V. Sinclair



FREE LANCE PHOTOGRAPHERS GUILD

Ask anyone on Wall Street to name a growth industry and he will say: Electronics and Chemicals (including synthetic fibers, plastics and agricultural chemicals). At the moment he may not be sure of the Drug Industry. Recent events have been a little upsetting for the miracles, Wall Street-wise.

Actually the Drug Industry is not only a growth industry but it would be a great tragedy and a serious indictment of its leaders if it is not a dynamic growth industry.

A growth industry can be measured by the wide horizon of its opportunities and by the record of industry management to measure up to these opportunities with courage and imagination. A dynamic growth takes place when an industry creates opportunities—products and markets—that are new and beyond the expected course of that industry's development. The tragedy of our ailing textile industry is that it was not its research but the heavy chemical industry's research which created the synthetic fibers; that it was Du Pont, for instance, who created Dacron, Nylon and Orlon rather than American Woolen or Pacific Mills.

The drug industry has acquired a technique and skill in research that is cumulative. The industry's management has learned not only that research is essential for survival but that it pays to be bold. It is entering a period where health education is reaching very great proportions and is already making the American public not only very generally health sensitive but prevention minded. The cumulative effect, from medical writers on nearly every magazine and newspaper, from advertising such as Metropolitan Life and particularly from constant nation-wide drives for financial support for research in Cancer, Heart, Infantile Paralysis, Arthritis and Rheumatism and others, is to deeply influence the American mind on health.

This new active and intelligent interest in health is bound to influence drug industry research. It is bound to provide expanding markets. Prevention will surely be the industry's key word in the future. All of these things provide the opportunities for growth over and above the normal average for all industry made possible by expanding population and wealth. But they do not mean dynamic growth. Where then is the opportunity of the industry—the manufacturer in his research and his marketing, the pharmacist in his misdirected fight with the grocery store, for dynamic growth. The opportunities are THREE, each a huge new dynamic market already under way, destined to add many hundred millions to manufacturers and retailers who seize the opportunity. These markets belong to the drug industry, manufacturer and retailer, more logically than synthetic fibers or plastics belonged to the heavy chemical companies twenty-five years ago.

The first of these many million dollar opportunities is in Nutrition. We said in our April issue that fifty million dollars was waiting here for retail druggists.

Nutrition belongs to the Drug Industry just as much as it does to the Food Industry. Drug manufacturers have already a heavy research investment here, many products now selling in large volume, a keen and growing interest by the medical profession.

The point here, which we cited in our April issue, is that few men in the Drug Industry realize that nutrition, dieting (not only low calorie, but low sodium, etc.) is a tidal wave of consumer interest, perhaps the No. 1 consumer motivation in a startingly wide variety of purchases today. This industry has a big head start with many products, it has the research facilities and knowhow and it has medical support. It holds the promise of many new millions of dollars for the manufacturer. It is one way of escape for the druggist from the grocery-store competition which should make a

For The Drug Industry

professional man ashamed of himself.

Number Two opportunity is in Animal Health. Here again the industry has a good start. A few leading companies are enthusiastically entrenched here. This market belongs to this industry. Its economic importance must be measured in many, many millions of dollars. Yet only within the last ten years has it been seriously recognized by many leading companies. Today it is not receiving the attention its market potential deserves, it is not receiving the research investment it must have. Above all, the retail pharmacist who could and must specialize in this field, is with few exceptions giving it very casual space, attention or professional interest. This is not just a farm market for the rural drugstore. Pharmacists generally would be quite startled if they would visit with a few local vets and notice the way these establishments have expanded and glamorized. The size of the pet market would hold quite a surprise for many druggists.

Number Three is Plant Health. To most of the industry and most druggists this is largely a new idea. A few companies are aggressively engaged in plant health research—most of it is government, college or the chemical industry.

Plant diseases of forest and fruit trees, of grain and vegetables, that is of economic crops, cost this country hundreds of millions of dollars each year. There is hardly any way to measure the loss in the possible near extinction of the Oak and Elm tree as happened to the Chestnut, or the near loss of the Banana or the possible wiping out of any fruit, grain or vegetable. All we can say is that each year millions are spent to save many more millions. And as plant breeding and hybridization expands to increase yields unfortunately one result which often takes place is a new susceptibility to disease.

The diseases of economic plants are caused by the same old kinds of organisms which this industry is so diligently researching in human and animal health, the fungus, the bacteria and the virus.

What makes this vast market so interesting and so vitally essential to this industry is that new treatment procedures are working in the same direction as in human and animal health. The chemical industry is fighting a rear guard action which seems to many to be a slowly losing fight, with its external sprays. The drug industry, approaching these plant diseases as a therapeutic procedure is proceeding with injection into the sap stream, with leaf or root absorption, in fact as a health question in a living organism which biologically does not fundamentally differ from human and animal treatment.

The drug industry must find the capital for greatly expanded plant health research. This enormous and essential market belongs to the drug trade, but the chemical industry doesn't think that way. Chemical leaders—heavy industrial chemical manufacturers, place agricultural chemicals at the top of their future growth markets.

Here again the druggist should not be misled by the fact that the big volume must go to the farm market. Mr. Burpee or many other eminent seedsmen and nursery men can tell him how large, enthusiastic and ready to spend is the home and amateur gardener.

The retail druggist has the professional education to be the expert in service in his community in these three expanding markets. His education has been applied to a fraction of his business while, in many communities, he has waited in frustrated despair while the pre-sold pickup business grew so vigorously in the grocery store. A college education is poor training for self-service selling of pre-sold package goods. But his college education makes the druggist secure and invulnerable

(*Continued on page 859*)

T.G.A. Meeting

DAVIS FACTOR, REELECTED PRESIDENT OF T.G.A.

Still with us is the Federal penalty tax on good grooming which is known as the excise tax," Toilet Goods Association President Davis Factor, chairman of the board of Max Factor & Company of Hollywood, told the eighteenth annual meeting of the association last month at the Waldorf-Astoria Hotel, New York. "The unfairness of this levy is recognized . . . by an ever-increasing number of legislators and Federal tax officials. The Korean situation is an obstacle to any tax reduction or elimination, but through a continuing educational program we are placing the women of America and our industry in a position to obtain relief. We must not become anesthetized to the pain of the excise to the point where our desire for radical surgery ceases. Many of the products sold by industry members, in addition to being requisites for good grooming, are perfect gifts. In competition with non-taxed gift merchandise, however, our position weakens and millions of dollars in sales are lost annually because of our unfavorable competitive position. Our fight against the excise tax must be in the nature of a crusade. It is expected that the appropriate committees in Congress will begin hearings on excise taxes next fall. At that time when the rally cry from our headquarters is sounded, we must lend all of our influence and support.

"Our recognition of the need of government for revenue must not stand in the way of battle for our cause, for that revenue should more properly be realized from other sources. Removal of the burdensome 20 per cent excise tax from our industry will unquestionably reflect itself almost immediately in greater sales for all companies. This in turn should help the profit picture, which help is so sorely needed by all cosmetic companies. We all know that our retail prices have not increased anywhere near in proportion to the cost of living during the past five or six years. On the other hand, our costs of labor, materials and all other operations have sky-rocketed. The Government also would benefit because through additional profits there will be increased Federal income tax payments which will offset to a considerable extent any loss of revenue caused by the removal of the excise tax.

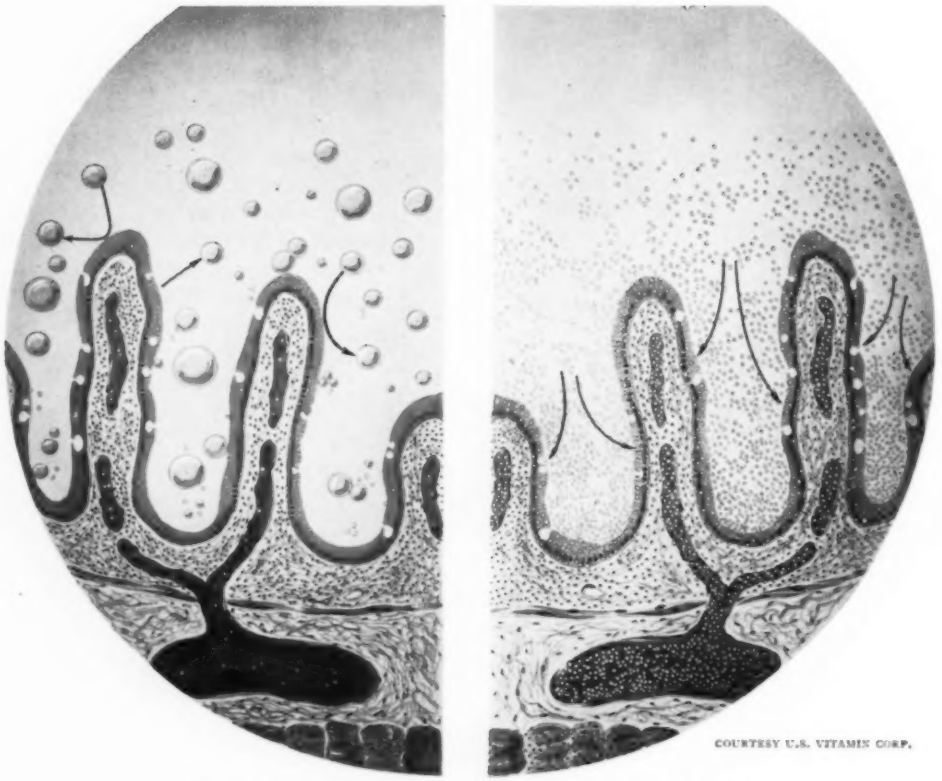
"There is still pending another matter which is, I believe, opposed by all responsible industry members—and that is the Delaney Cosmetic Control Bill. Through this and companion bills an attempt is being made to legislate conditions under which new products can be placed on the market and which could also affect many of our presently existing products. These proposed measures also require cosmetic ingredients to be specified on the labels. The T.G.A. is proud of the fine safety record of the industry and it is our opinion that if any changes at all are needed with respect to present regulatory laws or procedure they are minor and few. No general revisionary laws are desirable and the proposed Delaney measure would hamper us without cause. Somehow a short experience on a legislative committee just doesn't qualify our respected members of Congress to recognize and solve industry problems that we have been handling with more than modest success through our research and development.

"There isn't a great deal to report with regards to the Fair Trade Practice Rules governing the industry. These have been in effect for over a year and have caused some drastic changes in discount structures and promotional services offered by the various manufacturers. Most of the industry members have extended all of their efforts to the end of full compliance with the rules. Whether or not the Federal Trade Commission is satisfied with our plans still remains to be seen. It is to be hoped, however, that marketing problems, the solution of which was attempted through the rules and resultant plans, are solved to the point where no additional major upheavals are necessary. The Federal Trade Commission should, we feel, be understanding in its analysis of the individual plans that they are reviewing. It would, of course, be somewhat simpler if all the plans were similar and the only problem was to determine whether each plan was being enforced.

(Continued on page 865)

Up to Date on Vitamin A (PART I)

by Milton A. Lesser



COURTESY U.S. VITAMIN CORP.

Diagram showing influence of aqueous dispersion on particle size and absorption.

Those who have kept abreast of the situation are well aware that there is nothing static about the vitamin A picture. Stimulated in large measure by the development and availability of the synthetic products, nutritionists, physicians and pharmaceutical manufacturers are showing renewed interest in this vitamin. Not only is vitamin A finding broader therapeutic indications, but there are also many potential applications for this substance as a supplement to both human foods and animal feeds.

The potential for vitamin A was suggested in the review[1] published in DRUG AND COSMETIC INDUSTRY about three and one-half years ago. At that time, the synthetic products were just beginning to be known and their advantages were being recognized by a number of investigators. In this interval, the production of vitamin A has gone through a number of major changes, with the producers of the synthetic types competing sharply with the suppliers of the natural concentrate. During 1950, for example, greater production of synthetic vitamin A coupled with improvements in manufacture led to rather sweeping price reductions, almost closing the margin between the prices of the natural and the synthetic products. As of this writing, there is no price difference, per 1,000,000 units, between the two types.

Today it is acknowledged that the demand for synthetic vitamin A has exceeded early expectations. Large quantities are now being shipped to Europe and Asia, including sizable quantities to Japan which is itself a leading supplier of the natural product. In addition to American plants, the synthetic types are also being produced in England and in Switzerland.

Aside from price considerations and improved efficiency in manufacturing operations, there are other factors that are accountable for the rapid acceptance and growth of synthetic vitamin A. A great advantage of the synthetic products is their freedom from fishy odor and taste. Such properties as high purity, stability and uniformity also enter the picture. These charac-

teristics help to explain why the synthetic products have captured a good proportion of the pharmaceutical market.

These characteristics also help to explain the growing importance of synthetic vitamin A for the fortification of foods and beverages. Such usage received great impetus when the Food and Drug Administration, by publication in the *Federal Register* of May 21, 1952, permitted the use of synthetic vitamin A in oleomargarine. In addition, nutritionists are investigating the possibilities of the vitamin in a wide variety of food products. For example, the low natural vitamin A content of many foods and the losses of this substance which often occur during processing both suggest that judicious fortification would offer improvement. Thus, it has been suggested[2] that such fortification could be made with advantage to whole milk and milk concentrates, including dried milk products, to chocolate and malt-flavored beverage powders and beverage syrups, to infant formulas and baby foods, to dehydrated eggs and various cereals and other food products.

The ready availability of vitamin A, both natural and synthetic, appears to have encouraged the development of more stable, convenient, pharmaceutically elegant or readily utilized forms or preparations of this nutritional requisite. Of growing importance, for example, are processes for the preparation of aqueous dispersions containing both fat-soluble and water-soluble vitamins. Such products are growing in popularity for administering vitamins to infants and young children.

A number of methods have been developed for dispensing fat-soluble vitamin A in aqueous media. However, the procedure described in the Freedman and Green patent[3] of 1947, which makes use of certain surface active agents, is probably the most widely used—under license, of course. Since then, these workers,[4] as well as other investigators,[5-6] have shown that other types of dispersing agents may be used to make aqueous vitamin A-containing preparations. Of related interest are methods described in British patents[7] for making water-soluble stable esters or ethers of vitamin by suitable reactions with vitamin A alcohol.

Other patented procedures describe the production of so-called vitamin A powders. One such method is claimed[8] to yield unusually stable products by causing the oily vitamins to be adsorbed on aluminum hydroxide. Essentially the process consists of contacting a vitaminaceous oily material in an inert solvent with aluminum alcoholate, hydrolyzing the alcoholate, removing the solvent, and recovering a powder containing a high proportion of vitamin. In another procedure,[9] extracted and dried liver powder serves as a vehicle for the vitamin oil. It is stated that in such a product the stability of the vitamin A is high because the natural antioxidants of the liver remain substantially intact while the enzymic activity is practically nil.

The problem of stability, always an important consideration with vitamin A, has been attacked along two main lines. The first has been through the use of antioxidants, while the second makes use of procedures which exclude air and thus prevent oxidative changes and loss of potency.

One interesting and apparently successful approach via the second route employs a method in which vitamin A acetate crystals are encased in a gelatin matrix. By surrounding the individual particles, the gelatin coating serves not only to protect the vitamin A from atmospheric oxidation, but also from decomposition by other ingredients that may be present in a finished product. The stability of such a product is indicated by tests in which the vitamin showed no substantial

(*Continued on page 859*)

Chrystals of Vitamin A Palmitate.

COURTESY HOFFMANN-LA ROCHE INC.

Chrystals of Vitamin A Acetate.

Stephen L. Mayham, executive vice-president of the Toilet Goods Association, receives scroll of honorary membership in the Societ of Cosmetic Chemists from Dr. Paul G. I. Lauffer, of the George W Luft Co., president of the Society.

Cosmetic Chemists Meeting

Stephen L. Mayham, executive vice-president of the Toilet Goods Association, was awarded honorary membership in the Society of Cosmetic Chemists at the meeting of the latter organization held May 15 at the Biltmore Hotel, New York. Presentation of the scroll was made by Paul G. I. Lauffer, president of the Society of Cosmetic Chemists. Speakers for Mr. Mayham at the luncheon at which the presentation was made, were Frazer V. Sinclair, publisher of DRUG AND COSMETIC INDUSTRY and BEAUTY FASHION, and Maison G. deNavarre, author and consultant.

The morning and afternoon sessions were devoted to scientific papers, abstracts of which follow.

Toxicity Studies on Actamer

by Dr. H. A. Shelanski and Dr. M. V. Shelanski, Industrial Toxicology Laboratories, Philadelphia. Reported on acute oral toxicity studies with Actamer on white rats and guinea pigs. Materials include Actamer *per se* in a suitable solvent and soap containing Actamer, and soap controls. Eye irritation studies with Actamer *per se* and Actamer in soap are also reported. Subacute toxicity studies by percutaneous absorption on a ninety-day basis are reported on varying dosages of Actamer in a suitable solvent. Pathologic studies are reported on the above. Patch-test studies with Actamer *per se* in a suitable solvent, as well as soap containing Actamer, and control soaps are reported according to the Draize and Shelanski Repeated Insult Method.

Hair Loss in Humans and Some of Its Chemical Aspects

by Dr. Irving L. Milberg, Skin and Cancer Unit, New York University-Bellevue Medical Center. Discussion limited to some of the factors involved in the loss of hair from the human scalp. A brief summary of the formation, development, structure and physiology of the hair was presented in order to describe some of the principles involved in hair loss, as well as hair types. The molecular structure and the properties of hair was described. Alopecia is divided into two categories; one associated with diseases whether local or general causing hair loss, and baldness occurring without apparent disease of the scalp. The diseases causing alopecia have been well described in the many textbooks on dermatology. The explanation for ordinary baldness without apparent disease is varied and more interesting.

Explanations of baldness include exhaustion of nervous energy, overheating of scalp, toxic effects, the use of hats, the presence or the absence of fats, endocrine factors, seborrhea, heredity, zoological factors, newer chemical concepts and possibilities.

Amine Soap Hair Shampoos

by Miss Helen E. Wassell, Organic Synthesis Fellowship of Carbide and Carbon Chemicals Company, Mellon Institute. Recent trends in hair shampoos indicate a growing tendency to return to a soap-based shampoo,

modified to meet the present-day customer's requirements. The described chemical and physical properties of ethanolamine soaps indicate why they are particularly attractive and effective for the modified soap shampoo. The ease with which an amine soap shampoo can be prepared and a simplified production-control method for testing the acidity or alkalinity of the soap are described. A basic shampoo formula is given and various additives are suggested for modifying the viscosity and lathering properties, improving hard-water toleration, and maintaining a light color in amine soap shampoos.

The Need for Scientific Data in a Cosmetic Patent Program

by Thomas Cifelli, Jr. Among the avenues of patent protection open to the cosmetic industry are those involving new cosmetic chemicals; new cosmetic preparations that may have all old ingredients, or at least one new ingredient, or all new ingredients; new uses of old chemicals or compositions; and processes for making cosmetic chemicals or preparations involving new chemicals or preparations, making of old chemicals or preparations, or uses of old chemicals or preparations.

United States Patent law requirements are such that adequate patent protection cannot be obtained without experimental evidence furnished by the cosmetic chemist.

The cosmetic industry is in a state of transition, having proceeded from one which practiced secrecy to its present state where many progressive elements in their own enlightened self-interest make early and full disclosures of their research findings. However, there are some in the industry today who are spending appreciable sums of money seeking patent protection without success on account of the lack of experimental evidence, either because they have not seen fit to make the change from secrecy to full disclosure for patent purposes a 100 per cent one, or because they are unaware of the patent requirements.

The cosmetic chemist has a unique opportunity to point out the need for, and to furnish the indicated information to, the end that cosmetic patent disclosures and proceedings can be characterized by savantism and not obscurantism.

Some Infrared Applications to the Analysis of Cosmetics and Essential Oils

by Harry Hausdorff, The Perkin-Elmer Corporation, Norwalk, Connecticut. In the past year, the use of the infrared spectrometer has increased greatly in the fields of perfume and cosmetic chemistry. A few typical problems of analysis which may often be solved by infrared spectroscopy were discussed. In the cosmetic field, such cases as adulteration of beeswax, carnauba wax, and carbowax, identification of lanolin, Span 40, Tween 80, G-271, and analysis of chlorophyll were described. Analyses of citronellols, geraniols, rhodinols, purities of methyl ionones, adulterations of essential oils were considered as typical applications in the perfume industry.

The Pigmentation of the Skin

by Dr. Sidney G. Clyman, Skin and Cancer Unit, New York University-Bellevue Medical Center. The various components of skin color were mentioned and their derivation discussed, together with a brief review of the histologic appearance of the skin. Melaninization was described thoroughly: its etiology, enzymatic control, and latest investigative studies. A chart of pathological pigmentary disturbances was presented,

(*Continued on page 873*)

Speakers at the spring meeting of the Society of Cosmetic Chemists, left to right: Dr. S. G. Clyman, Dr. L. W. Hazleton, Harry Hausdorff, Dr. Irving L. Milberg, Helen E. Wassell, Dr. Dean Foster, Thomas Cifelli, Jr., Dr. M. V. Shelanski, and Dr. H. A. Shelanski.

COURTESY HELENA RUBINSTEIN

Polyethylene Packaging Problems*

by C. F. Wight,
J. A. Tomlinson
and S. Kirmeier

VAN AMERINGEN-HAEBLER, INC., NEW YORK

The advent of polyethylene as a packaging material in the early post-war years was met with immediate widespread acceptance, and rightly so, for it embodies many properties obviously valuable for a container. Because of its lightness, unbreakability, lack of taste and odor, pleasant "feel," flexibility, attractiveness when properly designed and colored, ability to be moulded into every conceivable shape, polyethylene containers have great sales appeal and are being used more and more generally for an ever increasing range of products. It has, in a very short time, become one of the most important plastics on the market.

Even though polyethylene films display permeation rates way below those of most polymers, they are not the complete barriers obtained with metals or glass. This flaw has caused concern on the technical level and some effort is now being expended either to correct it or circumvent it. However, first and of great interest to this industry is the phenomenon of perfume loss. Some work has been done in this line by interested concerns although little factual information has been published outside of the preliminary studies by Parliman[1] and Simril and Hershberger[2]. Although polyethylene is insoluble at room temperature, certain substances are absorbed with consequent swelling. This absorption is a measure of the permeation and Robertson[3] has determined the swelling indices of a number of representative liquids. He has shown polyethylene to be very selective in its absorption characteristics, with the swelling indices varying between a negligible value for water and liquids which contain a relatively large amount of oxygen, to much higher values for hydrocarbons and other liquids deficient or lacking in oxygen. Nitrogen compounds and halogenated hydrocarbons show relatively high absorption and transmission rates. The finding of the transmission rate has been approached by filling polyethylene sacs of 1.7 mils wall thickness and commercial polyethylene bottles of approximately 40 mils wall thickness with various essential oils and aromatic chemicals, heat sealed in the first case and closed with a screw cap in the second. These tests have a relative value in that they show, under given test conditions, the loss in weight of X aromatic as against Y aromatic. They do not show the true absolute permeation value which would be represented by the sum of the loss per sq. cm. through the area of liquid to surface contact, plus the loss per sq. cm. through the area of the vapor to surface contact per unit time at fixed temperature where there is a film of known uniform thickness. Here is where the first complication arises, for any piece of equipment designed must be worked out in terms of flat film—the only guarantee to uniform thickness—and must be fool-proof from the

*Delivered before Scientific Section, Toilet Goods Association, May 14, 1953.

standpoint of leakage. Such test cells have been engineered by researchers working on the diffusion of gases through various polymers, but no one has come up with a plan for a cell to reproduce the conditions existing in a partially filled bottle. The possibility of deviating results with different shapes or sizes, or variations in wall thickness at shoulder, neck and base, or changes in room temperature, or what occurs when a bottle is partially or completely full, is ignored. Since a start had to be made some place, we decided to use a four-ounce cylindrical bottle from one fabricator, almost half filled (50 cc) as our standard condition. Because of variations in wall thickness in blown or extruded bottles, we have resorted to the expedient of running each test in quintuplicate, then averaging out the results. As stated before, one obtains a relative although, indeed, a rough answer.

There is a time lag involved between the filling of the bottles and arrival at constant weight loss depending on the solubility, diffusivity and volatility peculiar to each aromatic. The true permeation rate is not measurable until an equilibrium has been attained between the liquid in the bottle, the liquid in the walls, and the liquid evaporating from the outside of the walls.

TABLE I

COMMON PERFUME MATERIALS
LISTED IN ORDER OF INCREASING TRANSMISSION RATE

Loss—less than one per cent*	*Loss*—one per cent to 10 per cent*	*Loss*—more than 10 per cent*
Hydroxycitronellal	Hydratropic Alcohol	Allyl Caproate
Mineral Oil	Amyl Salicylate	Spearmint
Cycloisoeugenal	Patchouli	Methyl Hexyl Ketone
Astrotone	Phenyl Ethyl Methacrylate	Iso Butyl Acetate
Diethyl Phthalate	Citral, C.P.	Bergamot Natural
Benzyl Benzoate	Geranyl iso-Butyrate	Amyl Acetate
Camphene Carbinol	Iso Butyl Phenyl Acetate	Eucalyptol
Phenyl Propyl Alcohol	Phenyl Acetaldehyde 100 per cent	Pine Siberian
Nigerian Balsam	Linalyn Acetate 98 per cent	Rosemary French
Balsam Peru	Phenyl Ethyl Butyrate	Ethyl Acetate
Ambrain	Iso Bornyl Acetate	Olibanum Oil
Cedrenol	Ethyl Aceto Acetate	Galbanum Oil
Nerol	Phenyl Ethyl Propionate	Canadian Balsam Oil
Balsam Peru Oil	Pseudo Linalyl Acetate	Dibutyl Sulfide
Phenyl Ethyl Alcohol	Styrallyl Acetate	Methyl Para Cresol
Dimethyl Phenyl Ethyl Carbinol	Geranium Turkish	Nutmeg
Peach Aldehyde	Terpinyl Acetate	Dipentine
Rhodinol	Phenyl Ethyl Acetate	Cymene
Alcohol C11	Hydratropic Aldehyde	Lemon, C.P.
Amyl Cinnamic Aldehyde	Clary Sage Oil	Grapefruit Oil
Sandalwood E.I.	Hydratropic Aldehyde Dimethyl Acetal	Orange Florida, C.P.
Alcohol C10	Methyl Phenyl Acetate	Limonene
Benzophenone	Geranium African	Bromobenzene
Water	Cedrone	
Styrallyl Alcohol	Geranyl Propionate	
Methyl Diphenyl Ether	Iso Jasmone	
Isoeugenol	Geranium Bourbon	
Benzoin	Terpeneless Petitgrain	
Jessemal	Amyl Benzoate	
Alpha Ionone	Para Cresyl Acetate	
Anisic Acetate	Methyl Heptin Carbonate	
Geraniol	Geranyl Acetate	
Gamma Methyl Ionone	Benzyl Acetate	
Terpineol	Citronellyl Acetate	
Menthol	Diphenyl Methane	
Aldehyde C18	Citronellal	
Cyclamal	Diphenyl Oxide	
Cedrenyl Acetate	Methyl Acetophenone	
Dimethyl Benzyl Carbinol	Petitgrain S.A.	
Methyl Eugenol	Ylang Extra	
Synthetic Camphor	Lavender Fleurs	
Para Methyl Dimethyl Benzyl Carbinol	Acetophenone	
Eugenol	Cedarwood White	
Resin Absolute Opoponax	Lavandin	
Bicyclohexanone P	Lavender Spike	
Myrrh Oil	Methyl Salicylate	
Tetra Hydro Linalool	Acetate C10	
Cinnamic Aldehyde	Methone	
Linalool	Peppermint Natural	
Methyl Anthranilate	Methyl Nonyl Acetaldehyde	
Ethyl Alcohol 95 per cent	Benzaldehyde	
Dimethyl Benzyl Carbinol Acetate	Safrol C.P.	
Aubepine	Aldehyde C10 Dimethyl Acetal	
	Cedarleaf	
	Thyme Lanitis Red	
	Anethole	
	Methyl Benzoate	
	Aldehyde C10	

*For a two-month period.

With many materials, this constant rate of diffusion does not obtain for several months by this test method; therefore, Table I includes only the partial list of those which have been under observation for two months or longer. Position on the table will not change markedly with further measurements.

In some cases where the material is very slowly volatile, it permeates through the bottle wall with ease but instead of evaporating from the outside, remains there forming a film which, by its presence, slows up subsequent permeation. Methyl nonyl acetaldehyde has a high permeation rate, but is so non-volatile that it forms a puddle around the base of the bottle and unless the outer surface is in some way cleaned off, the true loss in weight cannot be determined.

Tests on essential oils are obviously misleading for the results of the first months will be high while lighter portions are permeating, then lower as successively heavier fractions begin to diffuse.

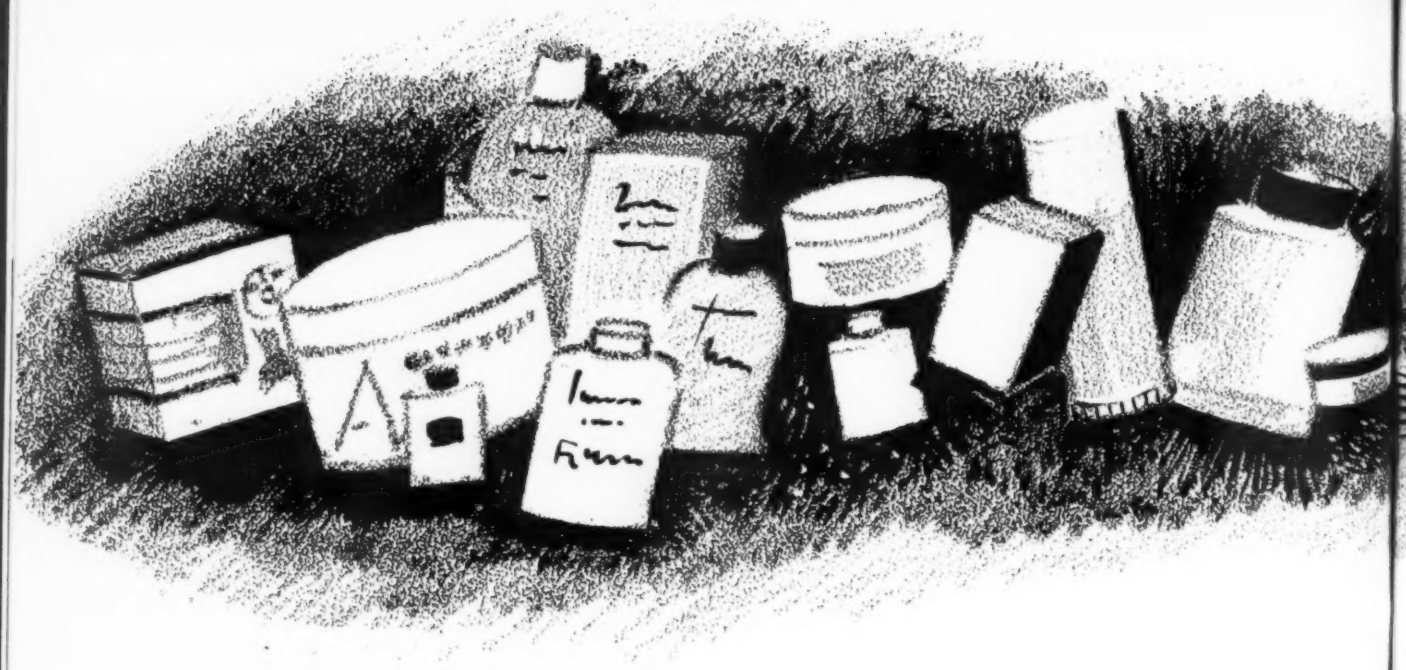
Resinous and crystalline materials familiar to the trade as heavy, persistent, and of low volatility are not lost in appreciable amounts. Alcohols are superior to the corresponding acetates by a factor ranging from two to ten, and, likewise, but to a smaller degree, are less permeable than the respective aldehydes; dimethyl acetals are unexpectedly poorer than the parent aldehydes. Terpenes and terpenic oils, low hydrocarbons and low ketones and esters are phenomenally bad while hydroxycitronellal is practically non-permeable. Others skip around in a most unpredictable manner, eugenol diffusing quite slowly, anethole very rapidly.

A promising means of quick evaluation of 100 per cent materials is in the study of the contact angle change. When a drop of the material to be tested is placed on a prepared surface of polyethylene it will flatten out in a degree commensurate with its solubility in the polymer. Accurate results depend on the careful measurement of angle change in a set time period using a calibrated optical intrument.[4] The degree of swelling of one-inch high, one-inch diameter cylinders of solid polyethylene immersed in various chemicals is also being checked as a possible easier method of ascertaining the permeability.

Now a really serious question presents itself, namely, can the results on 100 per cent materials be extrapolated in a linear fashion to the low percentages found in toilet preparations, ranging from three per cent in a toilet water to ¼ per cent in the more functional products? Some figures have been obtained on this score by using gravimetric methods showing how the percentage loss varies with dilution when single chemicals are employed. (See Table II, Page 836).

Tests using less than two per cent aromatic were considered unreliable for gravimetric determination. Later an extension will be carried out into lower percentages using chemical assays. The important factor in evidence here is that percentage loss climbs rapidly as the concentration of aromatic goes down.

(Continued on page 836)



Cosmetic Elegance

by Harry Hilfer

The term "Cosmetic Elegance" has a composite meaning which cannot be described too easily. Elegance is indicated when a product is described as rich looking or rich feeling or when a lotion flows luxuriously. A product which after application leaves the impression of making the skin feel softer without leaving it unsightly or greasy—a make-up preparation which improves not only the color of the face but makes the skin appear flawlessly alive without imparting any artificial connotations—a hair preparation which causes the hair to appear more lustrous are all part of this indefinable term. Its impartation to cosmetics is a quality which could easily make the difference between a poor selling item and one that is readily received.

By way of illustration we are in the midst of a wave of popularity for liquid cream sachets. From the odor standpoint there is actually no advantage in the use of the sachet as against an alcoholic solution of the essential oils as a perfume or as a toilet water. Indeed many perfumers insist that such a form is detrimental to the more delicate water present in the aromatic compound. The sachet form, however, is extremely popular, perhaps because it has a heavier viscosity or feels unctuous to the touch or because it looks somewhat different than the usual perfume vehicle.

I therefore think that if a product is endowed with a qualification in addition to the prime factor for which it is sold a contribution is made toward cosmetic elegance. This factor need not be present in a visible form necessarily, though this helps, but may contribute to the pleasant feel on application or to the feel of the film after application. A hand preparation which in addition to its functional purpose of acting as a protective agency, has a dried film which is pleasant to the touch is possessed of this in part as does a lipstick which makes the lips feel better in addition to its coloring effects. This would apply as well to a face powder whose film feels soft and smooth, or to a night cream which appears to the eye as rich as it does to the touch. The peak in Cosmetic Elegance is found in preparations where it looks, feels, and behaves nicely.

Approaching this problem in a negative fashion to indicate what the product should not do may be a better method of approach. Emulsions, in general, are the cosmetic products which are more susceptible to physical changes than any others and the major portion of this article will therefore be devoted to them. Fashions which detract from elegance may be classified as visual and sensatory. From the purely visual standpoint a lack of complete homogeneity is perhaps the greatest deterrent towards good appearance. This need not be construed as meaning a separation or

stratification into different layers; evidencing of curdiness or lumpiness are perhaps even more unattractive. This type of phenomenon usually takes place when the product is subjected to changes in temperature especially when subjected to higher than usual heat followed by rapid cooling. These are the optimum conditions for inducing a thixotropy to the lotion, which could be broken by vigorous stirring, but imperfectly, producing within the vehicle certain portions which still retain their thixotropy. Introduction of a small amount of a gum is a good but by no means perfect precaution against such an occurrence.

The presence of the gum also helps guard against a tendency towards foaming in this type of product when applied. This defect is only a minor detraction but the product would be better received if this tendency were reduced to a minimum.

The viscosity of the emulsion itself is equally important, and the measure of proper viscosity cannot be fixed at any one value since it must be dependent on the container in which it is being packaged. Obviously, a smaller bottle opening would necessitate a lower viscosity and vice-versa. The ideal viscosity is one which enables easy pouring from the container, but not too great fluidity on the palm of the hand, since too great a flowing ability would make the emulsion more difficult to apply without loss through dripping from the palm of the hand during the transference to the applied area.

Methods of arriving at the proper viscosity can be fixed only by empirical experimentation, since the factors influencing one emulsion will not necessarily apply in another. In addition an increase in viscosity may cause an undesirable gellation on long standing which also must be guarded against.

In creams a non-homogeneous appearance may be caused by too great an incorporation of air during manufacture, which will evidence itself by causing the surface to appear pitted and the cream itself to appear curdled after the surface is broken. The stirring rate therefore should be carefully controlled, to keep such incorporation at a minimum. Air incorporation should be generally avoided. There is nothing that detracts from the appearance of a lipstick as much as air holes on its surface, or for that matter a face powder box which appears half-full because of the escape of incorporated air during the filling operation.

Homogenization of creams by mechanical means such as the use of colloid mills, may be used to advantage to improve their appearance, but certainly not universally. Water-in-oil preparations as a whole benefit from such a treatment to a greater degree than do oil-in-water preparations, but there are exceptions to this rule in both cases. Indeed homogenization may sometimes cause an otherwise stable emulsion to break on standing. Here again, a good rule is trial by error, and, if homogenization can be used, to use it.

Cream and liquid cream shampoos are relatively new cosmetic items and I think their successful sale is due primarily to the fact that they look and are packaged as cosmetic preparations. It would seem that the same detergents and other qualifying agencies possess greater appeal in an emulsion than they do in a clear dispersion. Another contributing factor appears to be the greater ease with which the emulsion foam may be handled. These newer preparations are capable of a better controlled viscosity than are the clear shampoos and are therefore easier to apply. However the shampoos should be readily miscible with water and should be readily dispersible through moist hair. Otherwise the rinsing of the shampoo from the hair may become an unforeseen problem causing the product to lose its sales appeal. In thin formulation greater care should be taken to assume stability of the emulsion than usual, since a broken emulsion in a shampoo looks more unsightly than in perhaps any other preparation.

From a use standpoint the shampoo should possess some qualifying agency which would assure a pleasant "feel" to the hair after use. However incorporation of

(*Continued on page 858*)

Bill Brewer Day

May 14th was a red-letter day in the life of Willard O. Brewer who is up for retirement after a long business association with the Calco Chemical Division, American Cyanamid Company. His friends completely surprised him with Bill Brewer Day at the Essex Fells (New Jersey) Golf Club.

Golf was played morning and afternoon. Then the nineteenth hole was the scene of activity until dinner. At dinner Bill was not only royally feted, but many speakers unveiled his past from childhood down to the present.

During the dinner proceedings Bill was the recipient of many gifts, including a 3-D camera with viewer, projector and screen, as well as console television set.

Everyone enjoyed feting Bill, and Bill, after getting over the initial shock of the surprise, entered into the proceedings with a light and happy heart.

Glycerine Properties in Cosmetics*

By J. B. Segur and C. S. Miner, Jr.
THE MINER LABORATORIES, CHICAGO

Glycerine has long been used in toilet goods and its action as a humectant, as a plasticizing agent and as a soothing and softening substance for the skin are well known. Also of importance are its recognized safety and lack of allergenicity. All these characteristics are significant, and each is worthy of detailed discussion. In this paper, however, we shall confine ourselves to a few recent observations of our own on viscosity and on the measurement of humectancy that we hope will be of general interest.

DISCUSSION

Hygroscopicity

When comparing the hygroscopicity of cosmetic ingredients the usual procedure is to expose a sample in a suitable container to an atmosphere of controlled temperature and humidity. Changes in water content are then followed by weighing the samples. Such tests give useful information, but are tedious because of the long time usually required for the sample to come to equilibrium with the atmosphere and because of the numerous weighings required. For a simple determination of hygroscopicity we have found that very thin films deposited on glass cloth will give an answer in a very short time. Glass cloth was chosen because it would have less hygroscopic effect itself than would paper or an organic textile. After determining the dry weight of humectant on the cloth, its changes in weight and final concentration when exposed to any condition of humidity can be determined. Glycerine, sorbitol and sodium lactate were compared in this way. Propylene glycol cannot be satisfactorily tested because of its relatively rapid evaporation. When exposed to a change in relative humidity (from 79 per cent to 16 per cent relative humidity) the three materials behaved in a very similar manner. Ninety-five per cent of the change in concentration occurred in less than 20 minutes and each sample reached its new equilibrium in about 35 minutes. The results of this test are shown in Figure 1. If the change at any given time is calculated as a per cent of total change finally accomplished and plotted against lapsed time, it will be seen (Figure 2) that the three humectants are almost identical in the rates at which they approach moisture equilibrium.

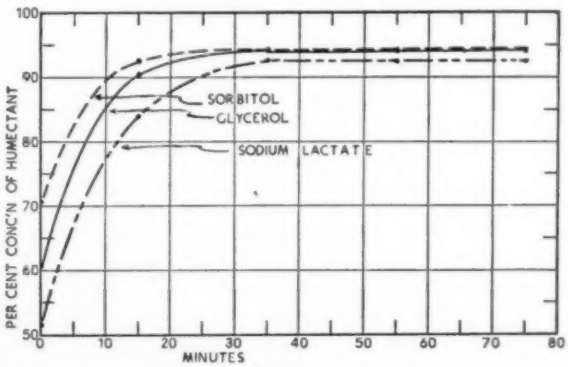


FIGURE 1
Rate of Attainment of New Equilibria by Humectant Solutions

Similar results are obtained when the change is from low to high humidity. The values determined by this method for the equilibrium concentrations of the humectants at a given relative humidity agree well with those obtained by other methods.

Although we have to date used this method only for testing the humectants themselves, we believe that it should, with minor modifications, be applicable also to testing many complete formulations.

Comparison of glycerine, sorbitol and propylene glycol

*Delivered before Scientific Section, Toilet Goods Association, May 14, 1953.

in a vanishing cream (Formula No. 1) by the usual

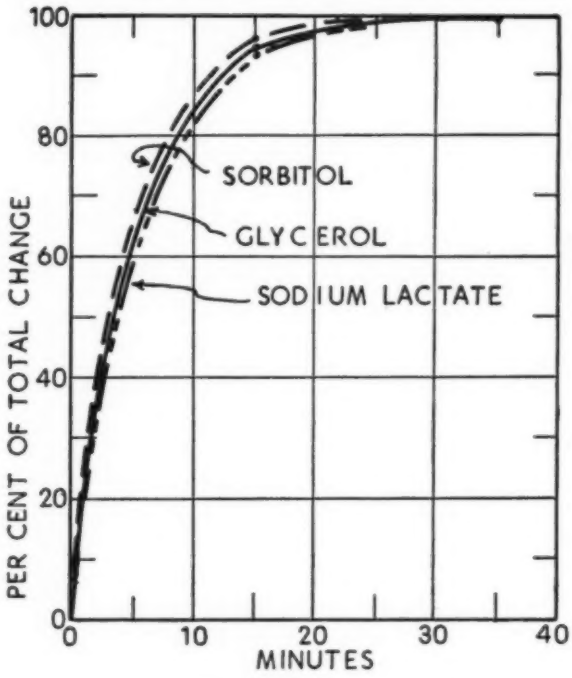


FIGURE 2
Per Cent Rate of Attainment of New Equilibria by Humectant Solutions

method of exposure in bulk has also shown that, in the formula used, there is no significant difference in the rates of moisture loss. However, there is a considerably greater loss of moisture from the cream without any humectant than from the others. The difference becomes greater as water loss progresses and the humectant concentration in the residual water becomes high.

EXPERIMENTAL

Hygroscopicity

Rapid Method: For a simple and rapid determination of the hygroscopicity of humectants such as glycerine, it has been found that very thin films deposited on the fibers of glass cloth will give an answer in a very short time. Glass cloth was chosen as a support for the humectant because it would have less hygroscopic effect itself than would paper or an ordinary textile. The pieces of glass cloth, about 3.5 x 7 cm. in size and weighing about 0.33 gram, were cleaned in chromic acid cleaning solution, washed, dried in a dessicator and weighed. They were then dipped in a 20 per cent solution of the humectant, again dried and weighed. The weight of anhydrous humectant, found by difference, amounted to about 60 mg. on each piece. While making this initial weighing of the dry samples, they were kept in closed weighing dishes to prevent absorption of moisture. The samples were then brought to equilibrium with an atmosphere of 79 per cent relative humidity at 18° C. and again weighed in closed dishes. From the increases in weight, the concentrations of the humectants were calculated. The samples were then exposed to the laboratory atmosphere which had a relative humidity of 16 per cent at 18° C. By setting out the individual samples at one minute intervals, all samples can be weighed at equal intervals after their initial exposure. They were weighed as frequently as possible while they continued to change weight. In this way glycerine, sorbitol and sodium lactate were compared. The results are shown in Figures 1 and 2.

Comparison in a Vanishing Cream: Glycerine, sorbitol and propylene glycol were compared under conditions of use by incorporating them in a simple vanishing cream[1] and measuring the weight losses of exposed samples. Two concentrations of each polyol were used and a control sample of cream without polyol was also prepared using Formula No. 1. The polyols, glycerine (95 per cent of concentration), sorbitol (71 per cent concentration) and propylene glycol (99+ per cent concentration) were calculated on the anhydrous basis and allowance made for the water in them so that the creams actually contained equal quantities of anhydrous polyol.

FORMULA No. 1. VANISHING CREAM

Ingredients	Per Cent by Weight		
Stearic acid	24	24	24
Water	75	64	60
Polyol	0	11	15
Potassium hydroxide	1	1	1

To prepare the cream, the water, potassium hydroxide and polyol were heated to 85° C. This solution was added slowly and with constant stirring to the melted stearic acid, also at 85° C. Stirring was continued until the cream thickened. It was then put into sample jars. The jars were low form, flint glass, 2-ounce ointment jars, 2 inches inside diameter and 1⅛ inch inside depth. Twenty-five grams of sample were put in each jar and duplicate jars were prepared. The samples were weighed, then exposed in the laboratory where the temperature varied from 80° to 84° F. and the relative humidity from 18 to 29 per cent. Weight losses were determined by daily weighing and calculated as per cent of the original weight. The maximum difference between duplicate samples was 3.0 per cent and the average difference was 1.2 per cent. Averages of the duplicate determinations are given in Table I.

TABLE I
WEIGHT LOSSES OF EXPOSED VANISHING CREAMS

Hunectant Used in the Cream	Per Cent Weight Loss			
	1 Day	2 Days	3 Days	4 Days
None	14.2	26.3	37.2	47.1
Glycerine 11 per cent	11.7	21.3	28.1	36.4
Glycerine 15 per cent	11.5	20.5	28.0	33.9
Sorbitol 11 per cent	12.8	23.1	31.1	37.7
Sorbitol 15 per cent	12.3	21.6	27.9	32.4
Propylene glycol 11 per cent	12.2	19.9	29.4	36.3
Propylene glycol 15 per cent	10.8	19.8	27.9	33.3

(*Continued on page 854*)

PACKAGE'S NEW Thrifty Labeler

All who have seen the new THRIFTY Labeler in our plant have marvelled at its versatility and ease of operation. It will label a remarkably wide range of containers — from a gallon jug to a 4-ounce bottle. Change-over is made in a matter of minutes.

Has a speed of up to 120 a minute. And containers may enter the machine wet or dry, hot or cold, without impairing the appearance of the label.

Its unique method of applying *flexible pressure* to the label eliminates glue failures and permits labeling on recessed surfaces or odd-shaped containers. Thermoplastic or hot-melt adhesive may be used merely by equipping the glue pot with heaters.

Easily installed on existing filling and capping lines. Automatic code dating available.

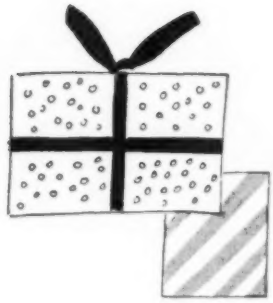
Low initial cost and high operating efficiency make the new THRIFTY Labeler worthy of your serious consideration.

Write today for full particulars

PACKAGE MACHINERY COMPANY • Springfield, Massachusetts

NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS
DENVER LOS ANGELES SAN FRANCISCO SEATTLE TORONTO MEXICO, D.F.

PACKAGE MACHINERY COMPANY



Packaging and Selling

POOR OLD POP

Now that Easter has flowed over the dam, the machinery is under way for the next promotion peak which promises additional business possibilities, particularly in gifts.

The perfume and the cosmetic folks now have ahead of them Father's Day. Mother's Day, which they had in May, has been a growing and increasingly important peak in the year for this industry. It has undoubtedly surpassed Easter and will undoubtedly move up to the number two place next to Christmas. Mother's Day is really clicking for many industries as a promotion peak which brings in business.

Although plenty of time and money has been spent on Father's Day and although some business is done at this time, there is something completely apathetic about the way business girds up its loins to tackle their promotions for this gift day. Poor Old Pop very definitely hasn't been bringing home the bacon to business and if there is any momentum in building this up as an important promotional occasion, signs of this are pretty thoroughly lacking.

The reason for this lack of any real enthusiasm for Father's Day certainly can't be attributed to business because both retailers and manufacturers have worked very hard to make something of this day. It must be that the blame rests entirely on Father, and for this there must be some subtle psychological reason which should be brought out into the open.

For one thing, Pop himself has become the most undistinguished, standardized and dullest male in the entire biological world. Among the insects, the fishes, the birds and the lesser animals, nearly without exception, the male has its periods of vivid personality and high distinction. Among the human species, up until shortly after the time of George Washington, the male was a vigorous, distinctive animal who declared his presence and individual personality with satins and colors in apparel that outshone the female, with a hair-do that made the female look palid, and with a wide and original variety of face foliage that made it practically impossible for anyone to ignore or pass him by. In those days, anyone would have to admit that Pop was quite a guy.

Today, Father looks with tolerance on his bobbysox daughter when she wears the plaid shirt and dungarees and reserves her raincoat for a sunny day and does it with such complete conformity with every other girl that it is hard to distinguish one from another. He looks with less tolerance, but rather with fatalism, upon his wife's attitude toward fashion and toward her fear of failing to completely conform.

But actually, if Father ever paused a minute to look at himself, he would find something frightening about the dull persistence with which he conforms so completely with other men.

There has not been a change of even trifling importance in male attire since the starched detachable collar and cuff was replaced by the softer attached collar and cuff. Men are still wearing just about the same dull dreary blues, browns and greys in the sack suit. So religious is this conformity that hardly any men's club will allow one of its members to enter the dining room or sit in the club in his shirt sleeves even on the hotest day of summer. Men still persist, on these torrid days, in going about their business with a shirt that has four layers of cotton in its collar and around this a necktie with two layers of fabric between which is a heavy insulated stuffing and over all this is the coat collar with at least four more layers of wool or a wool blend. The fact that Father has so completely abdicated anything which would give him individuality or personality might well be the reason why Father's Day has not been able to make the grade as a worthwhile business action. This day may well have to be put on the shelf until that distant period when Father breaks the chains of conformity and again resumes the place which nature very clearly meant him to take, as nature has very clearly proved, not only in the history of mankind or in the customs of prehistoric people, but in the entire biological world.

We would expect to see Father's Day a flaming period of respect and celebration and lavish gifts, when Father once again enters into his own domain and appears in purple trousers with a yellow satin coat and with ruffled cuffs and ruffled collars and with a selection of highly distinctive facial foliage. Then we believe Father's Day will be something to really anticipate, for business and for society.

Art and Onions

The headlong enthusiasm of the grocery supermarket to subordinate food marketing is still under way. What we would call the "Beaut of the Month" is happening in Detroit, where the Big Bear Market is selling art work display with its tomatoes and beefsteak. The brothers Max and Sol Shaye thought it was deplorable to have 250,000 shoppers a week passing through their store with nothing to buy except food products, toiletries, candy, etc., etc., and decided on fine art as an experiment. Just to prove that art is completely democratic and is not averse to a fast buck, the Detroit Art Institute and the Scarab Club and the Michigan Water Color Society and the Detroit Society of Women Painters and Sculptors and the Grosse Pointe Painters Association cooperated. Said the manager of the Art Institute, "This is a great opportunity for other artists in Michigan."

Other Side Looks Better, Maybe

There are quite a few rumors going around the trade about cosmetic companies, now established in the retail trade, going into house-to-house selling or dickering with current established house-to-house companies to carry their line just the way a retail store does.

There isn't any question that there is a very deep-seated dissatisfaction in many parts of the cosmetic industry today with retail distribution, particularly department store distribution. This is because the cost of selling in stores of this sort has eaten up all the profit of quite a number of manufacturers and also because this business has very largely degenerated into a price-conscious promotion business which has brought some companies to the verge of bankruptcy. It may be natural to look at house-to-house selling as a place where none of these evils can possibly exist because the manufacturer, through his direct agent, very largely controls the terms of sale. This field may also look bright and bonnie because during the last ten years it has shown an annual sales increase of from 10 to 12 per cent and also because the largest and most profitable company in our industry operates exclusively in this field.

There have been some news comments already, on the way Harriet Hubbard Ayer is now experimenting in house-to-house demonstrations. This operation has been specifically described by company officials as a retail extension program where the canvasser is directed locally through the retail store and where the retail store shares part of the expense and where the store gets the credit and makes the delivery of any sales that are made in the home. No word has leaked out that this company intends to expand into house-to-house selling independent of retail association.

The small cosmetic company, Rimmel, has been reported for several months to be working with a large greeting-card manufacturer on a house-to-house program on the theory that greeting-card agents have a substantial slack period where a cosmetic line would give them an opportunity for continued contact with a clientele and a continued income.

It is pretty well written on the record that house-to-house selling is one of the most difficult forms of distribution to maintain. Anyone who would like to verify this statement need only get a list of the many companies who have tried this method of selling over the last twenty-five years and who have bitten the dust, some with substantial losses. It is a difficult technique that not only requires a great deal of long experience and skill but which apparently also requires a very substantial momentum which can only be built over a protracted period.

The rumors that one or two of the leading house-to-house companies may be planning to put out or to produce a retail line is rather humorous. This is looking at the other side of this coin. The only reason we can think of that a successful house-to-house company would tackle the hazardous retail store distribution, where the effort required for a new company to shoulder its way into this overcrowded field and secure appreciable volume, would be that the house-to-house people have decided that their own way of doing business is either reaching saturation or sharply diminishing returns.

With all these rumors, it looks to us somewhat as if a great many people in the cosmetic business are (1) very unhappy with their current way of doing business; (2) do not see any immediate way out of this dilemma to a place where they can make a profit on their volume; and (3) that the branch of the industry they are in is too badly overcrowded, with little opportunity for expanding profitably.

Expanding Super-sales

Cosmetic and drug products will continue to expand during the next five years, according to a recent survey by the National Association of Retail Grocers. In this survey 98 per cent responding expressed that opinion. Among the independent grocery stores surveyed 81.9 per cent said that they currently handle products in the drug and cosmetic classifications. The average number of items carried is 150 today as compared to 51 when the departments were initiated. Sales for this department now account for 2.77 per cent of total store volume and the average profit yielded by the department is 28.5 per cent.

In buying practices 36 per cent of these grocers prefer to do business with their regular wholesale grocer; 33 per cent favor the rack jobbers; 15 per cent like the drug wholesaler; 14 per cent want to buy direct and 2 per cent lean toward brokers.

In answer to the question "How often do you see drug salesmen?" 15% said never; 29% weekly; 17% monthly; 14% every two weeks; 13% every two or three weeks.

Pointed Index

Economists are very busy nowadays and are fluttering around with conflicting reports. We are getting plenty of the deep analyses based upon car loadings, steel production and the whole bag of tricks upon which these prophecies are based.

Much more impressive to us than the economists' index was the window display of a Bond store on Fifth Avenue. In this window was a showing of men's suits

DRESSING UP makes the difference!

Here's elegance that isn't costly. This 4-ounce Duraglas stock-mold bottle, A-9454, and Empress closure combine quality and economy. Other sizes: ⅜, 1½, 1¾, and 10 ounces.

Glistening Glass... chic closures... exclusive ACL label designs blended tastefully create a salespackage that's hard to resist.

May we submit our ideas for a Duraglas salespackage for your products?

Duraglas packages are protectors of quality

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

SHEFFIELD TUBES

Selected for VO5 —Here are three characteristic symbols of good grooming: The barber pole . . . VO5, a superb hair and scalp conditioner and a favorite of American men, women, and children . . . and Sheffield collapsible tubes, the choice of discerning manufacturers the world over. Package your products in *Sheffield Process* collapsible tubes. Rugged, lightweight, they're the result of generations of tube-making experience. You'll enjoy economies in shipping and storage. And for merchandisers of new products, we offer you a complete tube-packaging and tube-filling service for your convenience. *Call on your nearest Sheffield representative today for fast quotations, tube samples, and free tube catalog.*

THE SHEFFIELD TUBE CORPORATION

Home Office—New London, Connecticut
Sales Offices—New York, Chicago, Los Angeles

with a large sign proclaiming "two pair of pants for each suit." It seems to us that the return of the two-pants suit could have a lot more significance than most of the venerable indexes used by economists.

Not Monopolistic

Advertising is still quite away from demonstrating any ability to create a monopoly.

Certainly the cigarette industry is an excellent example of an industry where a few brands, upon which millions of dollars of advertising money are spent, completely predominate the market. Nevertheless, smokers spent more than $500,000,000 last year for brands other than the six big leaders.

T'aint Fair

Trade meetings this year look as if they are going to get down to brass tacks. The members are probably going to ask more very blunt questions. At a recent local meeting, a store operator said that during the past post-war years he has never felt that he has been able to get a definite or a proper answer to certain important questions, from his viewpoint as a retailer, when he was considering a new product.

Here are some of the questions that he would like to know:

He would very much like to know just how the new product differs from similar items he now stocks. He is getting tired of building a larger store to handle duplicate items.

He wants to know how many turnovers a year can be expected from this product. He is getting tired of items which came into existence simply because a manufacturer thinks that he can duplicate any other successful product which appears in any branch of his field.

He wants to know the recommended retail price and what the supplier will do to maintain this price, which must produce a reasonable retail profit.

He wants to know whether the advertising program is all that it is represented to be and that it is a year-round sales force and not just something to jazz him up with the hope that he will believe this is a continuous program.

An awful lot of manufacturers will think that questions like these are very unfair for the retailer to ask. After all the money they are spending in advertising, retailers ought to stop asking questions and go out and do a big promotion job for them.

Some Dolls

You can always expect this industry to be in the front rank of anything new or novel to be tried in sales promotion. Now it is the tie-in of an advertised product with a toy.

According to experts of the Toy Guidance Council there will be an increasing number of toys identified with national brands in marketing.

Already well intrenched in this development is the Toni Doll, the Hair Kit, the Harriet Hubbard Ayer Doll with a cosmetic make-up kit and the new Doctor and Nurse Kit with real Johnson and Johnson bandages.

Testimonials

At the last meeting of the Association of National Advertisers, several speakers struck a sour note on the value of the testimonials in advertising.

One agency executive whose company has gone into this in a very thorough research way finds that a high percentage of women develop strong negative reactions to Hollywood personality ads. Women almost universally believe that these stars are paid for their endorsement and that they will endorse anything for which they are paid, regardless of whether they have ever used the product or not.

Retail Research

McKesson & Robbins has opened a model demonstration drug store in Cleveland which will serve both as an experimental laboratory in retail marketing and as a model in modernization for retail druggists to help them meet the competition of other kinds of retail outlets.

This model store will experiment with self-service, with self-selector units which will test impulse buying and self-service in a variety of drug store merchandise.

More Tie-Ins

One of the broadest sales promotion tie-in brands in our industry is being conducted by Northam Warren for Cutex. Tie-in promotions have been arranged with The American Optical Co., Bonart Handkerchief Co., Century Mills, Flower Classics Inc., Irving Hat Lining Co., and M. Slifka & Son on the basis that nail polish and lipstick are as much a part of the accessory picture, and just as essential, as a smart hat or scarf.

Still Going Strong

Food stores are still gaining sales by cosmetic and toilet articles. According to the Milwaukee Journal Consumer Brand Preference Analysis, 38.9 per cent of the families in this area are buying toilet articles in grocery stores as compared to 32 per cent in 1952 and 8 per cent in 1948.

Women in this area have increased the use of lipstick to 90.5 per cent for this year, as compared to 85.4 per cent in 1951. Hazel Bishop has forged into leadership with 17.2 per cent of the women using this lipstick. Hand lotions have shown an increased use with 66.9 per cent using a hand lotion in 1952 as compared to 62.2 per cent in 1951.

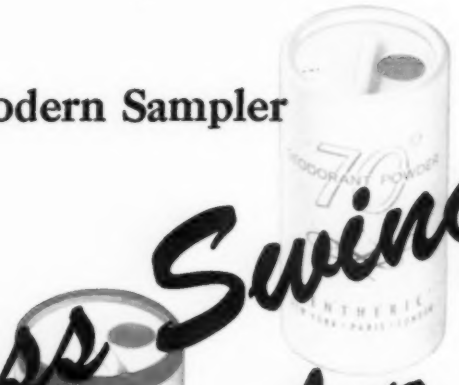
A survey made by the Washington Star shows that in 45.4% of the areas families now buy toiletries and cosmetics in a grocery store as compared to 40.9% in 1952.

Package Counts Most

A product that has excellent but only regional or spot distribution represents a major packaging problem, according to Alan Berni, President of Alan Berni & Associates, Inc., and Treasurer of the Package Designers Council.

Today's Modern Sampler

Cross Swing Sifter Sampler



MADE IN LARGE SIZES, TOO

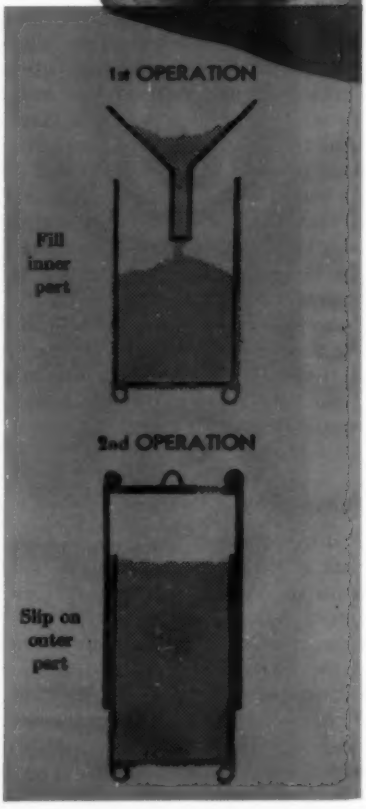
So good for sales! So easy to fill!

In the face of current selling conditions, distribution of product samples is rapidly becoming a necessity. And these Cross round miniatures provide the modern answer for the perfect sampling container.

Dressed as an exact replica of your full size container, patented Cross Swing Sifter Samplers are sure-fire for sampling all sorts of powders such as cosmetics, food, drugs, pharmaceuticals and anything else that can be dispensed through a shaker or a sifter.

LOW COST FILLING

Almost any standard filling equipment can be used to fill Cross Samplers. Just fill the inner section, and then slip the outer part over it. Then a simple twist of the top, and your product flows freely.



Ask for a representative to show you samples and discuss your problems.

CROSS PAPER PRODUCTS CORP.

4377 Bronx Boulevard — New York 66, New York

DESIGNERS • CREATORS • MANUFACTURERS OF INDIVIDUALIZED ROUND AND OVAL PACKAGES

Mr. Berni believes that the so-called "B" brands must have packaging that is as good as, if not better than, their more widely known competitors. This is because as much as 90 per cent of the sales responsibility rests with the package. It is, therefore, imperative that the package instantly convey the idea that the contents meet all established standards as well as, if not better than, the "big name" competitors who are pre-selling their product with large national advertising campaigns.

Another First

The advertising bill in America was estimated to be 7.4 billion dollars and to be more than the combined total of all the other countries in the world. It's estimated that in America $47.00 was spent in advertising last year for every man, woman and child. This compares to $9.00 in England, $6.00 in Denmark, $3.00 in France and $0.46 in Italy.

Family Digest for Better Health

At long last, the druggist is going to get a magazine which he can call his own, and which will be exclusively sold through the drug store. This magazine, entitled, "Family Digest for Better Health," will sell at ten cents.

News releases state that the new magazine is being launched with "the backing and blessing of virtually the entire drug industry." It is receiving all sorts of endorsements from local pharmaceutical associations. The supermarkets have had two or three magazines sold exclusively through grocery stores and basically conceived both to promote the sale of food products and also to furnish a store tie-in of advertising in a national magazine at the point of sale. These magazines have made a very substantial growth during the last few years and for a while it looked as if the store-sponsored magazine, organized on a sufficiently large scale, might bring a new era in magazine publishing. Certainly, during this hectic age of point-of-sale adulation, these magazines seemed to have a stunning advantage.

Undoubtedly they are still operating as profitable businesses but the clamor and the excitement appears to have died down. We see no signs of growing panic on the part of the established woman's service magazines which still have Uncle Sam deliver their product to the customer's home. In our opinion the present status of these supermarket magazines indicates that the druggists are acquiring nothing more than another small source of income and that advertisers will be provided with another magazine which still has to prove its editorial ability to compete with several present newsstand health magazines.

Fickle Customers

Many people in this industry have been talking a great deal about brand-disloyalty and the fickleness with which a customer will switch from a long-established brand and a long-established habit of product usage to explore some new and exciting claim.

The cosmetic industry has been particularly susceptible to this lack of brand loyalty, as anyone manufacturing a lipstick or a cosmetic cream knows. Certainly the tooth paste people must agree, since they have been subjected to periodic shocks which put their powerful brands under heavy pressure. The food industry has been providing some similar cases of the same willingness of the consumer to switch and experiment. A market analysis of the World-Herald in their city of Omaha on food products gives a striking example of what can be accomplished by a newcomer. The Duncan Hines Cake Mix, a national brand was introduced into Omaha last year where it captured 50.7 per cent of the market against such tough fighters as Pillsbury. This year, the second year of its market life, this new cake mix now has 57.9 per cent of the market.

New Record for Premiums

According to Printers Ink, last year set a new record for the use of premiums. There were 533 offers by 224 national and sectional advertisers. Toilet articles were used in thirteen promotions.

New Pres-O Aerosol Tops

Oil Equipment Laboratories, Elizabeth, N. J., has developed three new Pres-O-Aerosol tops, each one styled to fit specific needs of particular products. Tilt-Top, for example, is designed for whipped cream, shaving cream and other foam products. Touch-Top, for anything that can be Aerosol sprayed, is especially for such fields as cosmetics, hair lacquers, insecticides and paints. Twis-Top, easiest of the three to use, is for either spray or foam, and requires but a twist to open or close the top.

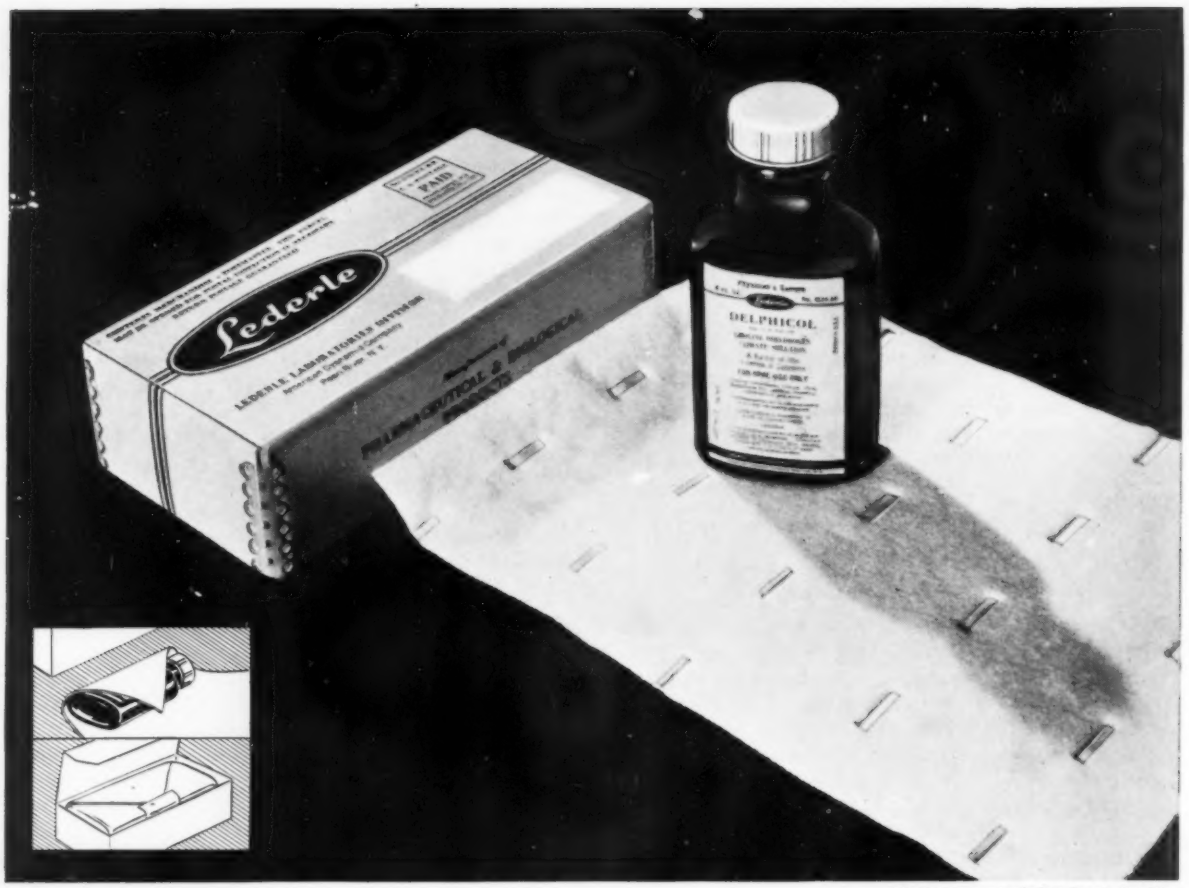


Photo courtesy Lederle Laboratories Div., American Cyanamid

Custom Protection

—the safe, smart way to package pharmaceuticals

Do you know how easy it is to prevent damage in transit—speed up packaging operations—and reduce shipping costs? You *will* know—when you try Kimberly-Clark Interior Packaging—KIMPAK*—a modern packaging material of unlimited versatility that provides *custom protection* for every type of pharmaceutical product. KIMPAK is especially suited for mailing liquid samples, since it will absorb up to 16 times its own weight in liquids within 30 seconds. KIMPAK is suggested in the Official Postal Guide not only for its absorbent qualities, but because it acts as a *cushioning* agent as well. It protects the most delicate products against damage in transit from shock, vibration and rough handling, yet is light enough to offset recent rate increases. KIMPAK is clean, soft and sanitary—as easy to apply as wrapping paper. And it's available in a wide variety of roll and sheet dimensions, in various thicknesses, with and without backing—to suit your specific need in the custom packaging of any type of pharmaceutical product. For complete information, write to Dept. J-63, Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMPAK INTERIOR PACKAGING

A Product of **Kimberly-Clark**

*T. M. REG. U. S. & FOREIGN COUNTRIES

Now we can tell You!

VACUUM PLATED STOCK CAPS

Available for Immediate Delivery

in

GLEAMING GOLDCÔTE

or

LUSTROUS SILVACÔTE

RICHFORD
CORPORATION
251 FOURTH AVENUE, NEW YORK 10, N. Y. • ORegon 4-5605-6-7-8-9-10

CONFIDENTIAL MEMO TO ALL RICHFORD REPRESENTATIVES:

We've just done it—and done it right!

The new Vacuum Plating Process is a smashing success. Any glass or plastic closure can now be flawlessly plated to duplicate the finish of brass or silver. Perfume manufacturers' worries about rising cost of metals are ended. Expensive metal caps and other closures are a thing of the past!

I know you have been eagerly awaiting this news for some time. Here is the full story:

This exclusive Vacuum Plating Process produces gold and silver finishes on glass and plastic that stand up superbly to any test used on metal items. Only after lengthy research did this revolutionary process prove itself perfect. Exhaustive tests were performed, including acid, alkali, immersion, fading and abrasion. In every test the Vacuum Plating Process came through with flying colors.

This means that you can now sell the famous Richford line with all the beauty of metal at substantial savings to perfume manufacturers everywhere! Of course, brass closures will still be available, but I imagine that most manufacturers will leap at the chance to cut costs with no loss of package prestige.

Incidentally, Richford Spillproof perfume flacons are also available Vacuum Plated. This should mean added sales above and beyond the terrific job you are doing right now on Spillproof.

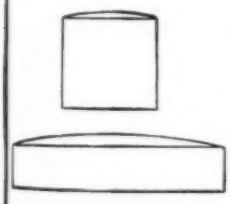
I'm anxious for your reaction. Good luck.

PER: lg

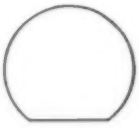
Cordially yours,
RICHFORD CORPORATION

P. E. Roehrich
Pres.

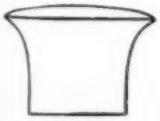
RICHFORD PUSH-UP
RICHFORD TOUCH-N-FLO
RICHFORD SPILLPROOF PERFUME FLACONS



STRAIGHT SIDE
Sizes: 8 to 89 MM.



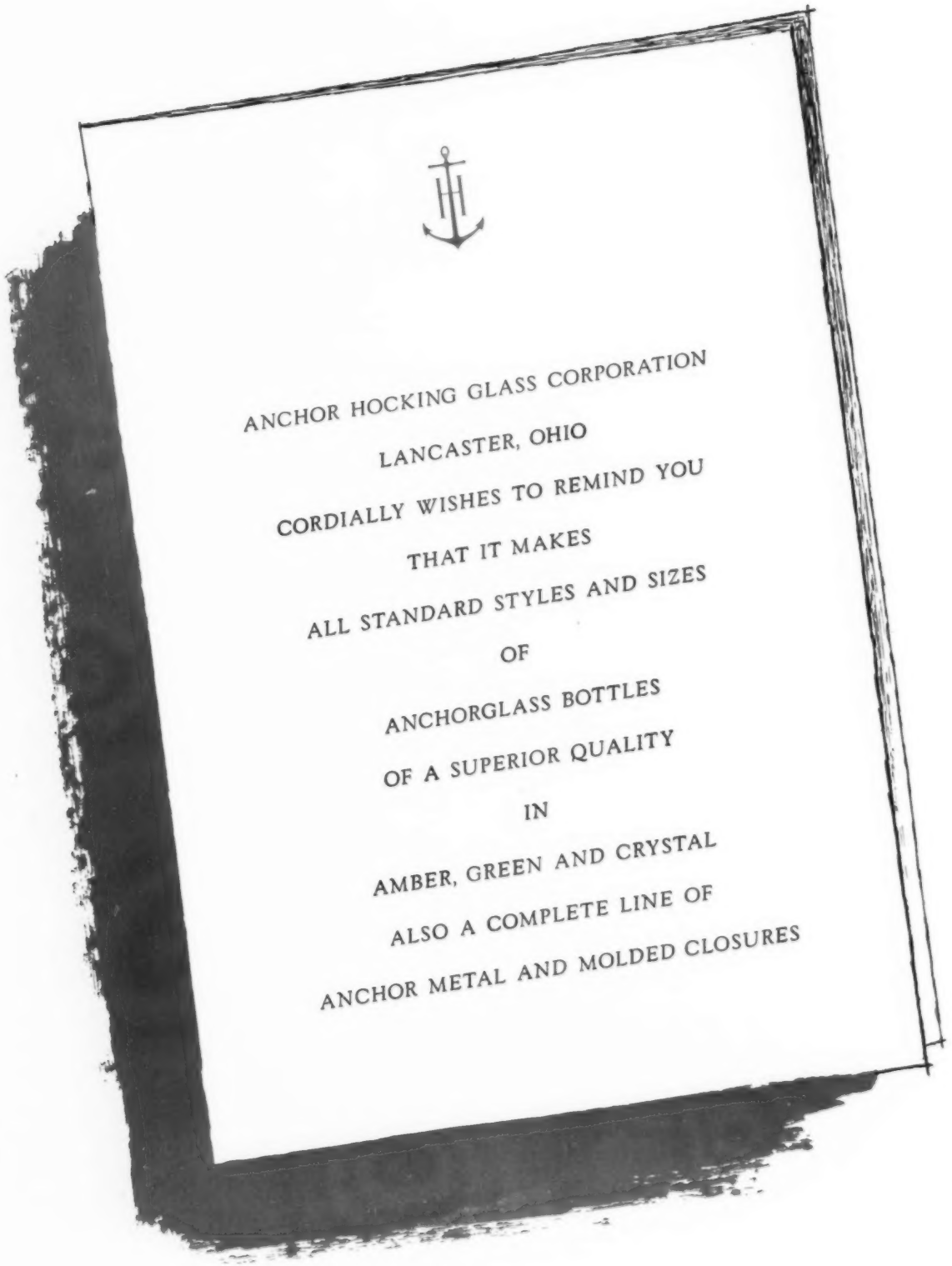
BALL
Sizes: 8 to 22 MM.



FLARE
Sizes: 8 to 22 MM.

All caps in varying heights:
Low, Medium and High

Early reaction Overwhelming.
Write Today for samples + prices.


ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO
CORDIALLY WISHES TO REMIND YOU
THAT IT MAKES
ALL STANDARD STYLES AND SIZES
OF
ANCHORGLASS BOTTLES
OF A SUPERIOR QUALITY
IN
AMBER, GREEN AND CRYSTAL
ALSO A COMPLETE LINE OF
ANCHOR METAL AND MOLDED CLOSURES

Winthrop-Stearns is now the exclusive national distributor of the line of veterinary products developed and introduced by Eaton Laboratories. The company is increasing its service to the veterinary profession through the addition of the "highly-regarded, proven group of nitrofuran products," states Dr. Charles E. Fanslau, director of Winthrop's veterinary division.

Smith, Kline & French is also introducing Dibenzyline, a new, orally effective adrenergic blocking agent for the treatment of peripheral vascular disorders and hypertension of pheochromocytoma. The product increases peripheral blood flow, raises skin temperature, relieves causalgic pain and lowers blood pressures.

Winthrop-Stearns has announced a new packing of Betasynplex "Niphanoid," omitting the diluent. The product is an injectable, highly concentrated mixture of synthetic vitamin B complex factors, including B_{12}.

Mallinckrodt Chemical Works is offering dry prescription chemicals in new and efficient rectangular-shaped, wide-mouth bottles to pharmacists through wholesale druggists. This is the first time a manufacturer has offered dry prescription chemicals in anything but round bottles. The new bottle is trade-named Stormor because of its space-saving shape. Five of them fit in the space occupied by four round bottles.

The National Drug Co. has introduced Androlone, a crystalline steroid hormone, to the medical profession. It is indicated for patients with inoperable carcinoma of the breast and those debilitated by acute or chronic illnesses.

Organon Inc. has introduced Binaemon, the first hematinic to provide intrinsic factor concentrate. It has been designed for adequate treatment of any and all kinds of anemia, and is available to the pharmacist in bottles of 50 tablets.

Max Factor has created two new shades in Creme Puff, the new blend of creamy makeup base and powder that is applied with a puff. The shades are Twilight Blush, to give the skin the "soft, rosy glow of sunset," and Sun Goddess, a warm, deep tan.

Merck has announced the availability of one per cent Topical Ointment of Hydrocortone Acetate for the local treatment of allergic skin disorders, as well as 5 mg. tablets of Hydrocortone, for the treatment of rheumatoid arthritis and other diseases.

Pedinol Laboratories has produced a new castor oil skin preparation, Pedinol Hydrisinol Creme. It is an odorless, water - soluble compound intended for use as a massage cream. It is said to be an excellent substitute for soap.

Ives-Cameron Co. has released Monichol for national distribution. This preparation is a new physio-chemical complex containing as its components, Polysorbate 80-Choline and Inositol in a flavored aqueous and glycerine base. Monichol is indicated in those conditions characterized by hypercholesteremia of the idiopathic or familial type. It is also of value in disturbances of the cardiovascular system associated with hypercholesteremia.

Eli Lilly & Co. is marketing an antibiotic medicine for veterinary use only, for the first time in its history—Duracillin A. S. (Procaine Penicillin G in Aqueous Suspension, Lilly). It is available in a 10 cc. multiple-dose, rubber-stoppered vial of 300,000 units per cc. and in a disposable, plastic syringe containing a single dose of 1,000,000 units. The newly-designed syringe has a stout needle for puncturing through animal hides.

Lederle Laboratories has prepared Aureomycin Triple Sulfas in what is believed to be the first commercial combination of a broad-spectrum antibiotic and the sulfapyrimidines. The product combines four powerful antibacterial agents in one tablet—aureomycin, sulfadiazine, sulfamerazine and sulfamethazine. The antibacterial action of any one of these drugs supplements the action of the others, thereby increasing their effectiveness over the use of any of them singly in the treatment of certain types of infections.

Continental's plate inspectors are old-school perfectionists

OUR "CLEAN PLATE CLUB" HELPS YOU SELL

Clean, crisp printing plates—and only that kind—will make the handsome lithographed containers that sell proprietary products. So, though Continental has presses that roll at dizzying speed, one place we never try to save time is in the preparation of plates.

Continental's photo-compositors are perfectionists. They aren't happy until every last detail of your package design is faithfully caught on metal.

When they turn their plates over to the pressmen, there can be no doubt about the appearance of the finished container.

Fine lithography is only one of the services Continental offers its customers in the toiletries-drugs field. They range from package design to packaging machine maintenance. We'd like to show you how we tailor these services to your individual needs. Just give us a call.

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EASTERN DIVISION
100 E. 42nd St., New York 17

CENTRAL DIVISION
135 So. La Salle St., Chicago 3

PACIFIC DIVISION
Russ Building, San Francisco 4

Doings ... (CONTINUED)

Quinn Drug & Chemical Co., Greenwood, Miss., is now packing drug and proprietary items in uniform Shelfline bottles. Redesigned labels add to the neat, uniform appearance of the line for greater shelf appeal. The drug products are distributed in the Mississippi Valley area through wholesale druggists only.

The Duraglas Shelfline bottles and white metal lithographed closures are made by Owens-Illinois Glass Co.

Schering Corp. has prepared Chlor-Trimeton Injection "10" and Chlor-Trimeton Injection "100", the former antihistamine being packaged in 1cc. ampuls, 10 mg. per cc., and the latter, in 2 cc. multiple-dose vials, 100 mg. per cc. The Chlor-Trimeton "10" is used to prevent mild to severe chills with associated fever, nausea, vomiting, malaise, or prostration, which may result from blood transfusions. The other dosage form is indicated in drug reactions, desensitization, ivy poisoning, and pollen type asthma, as well as other conditions.

Elmo's new spray deodorant, with a new, all-protective fragrance as its salient feature, is being packed in attractive self-display cartons of 12.

Parke, Davis has announced that its anti-tuberculosis drug, Viomycin, is now available to physicians. It is supplied as a sterile powder in Steri-Vials containing the equivalent of 1.0 gm. of Viomycin base.

Helena Rubinstein has perfected a Perfume Spray Deodorant and a Perfume Deodorant Stick which gives long-lasting protection, dries quickly, works as an antiperspirant, is pleasingly scented, gentle to the skin and antiseptic as well.

Squibb is now supplying Randixin (Squibb Rauwolfia Serpentina) in tablet form. Raudixin is safer than other hypotensive agents and has no serious side effects. Its action is mild and gradual, but once achieved, may last for several weeks after withdrawal, and is especially recommended in relatively mild cases of hypertension where the risks associated with treatment with other hypotensive agents would not ordinarily be justified.

Guardian Chemical Corp.'s first product to be introduced is Foroxin, for the treatment of athlete's foot. Distribution is now being arranged in the South, with distribution in the East and Midwest to follow this month.

Lederle Laboratories has placed a new jelly form of Varidase streptokinase-streptodornase on the market which will make Varidase more widely useful. The package includes a 15-cc. jar of water-soluble jelly and a separate vial of Varidase. The jelly enables the physician to apply Varidase to the wound with a dry bandage and can therefore now be used on ambulatory patients without inconvenience.

Smith, Kline & French Laboratories is introducing the third application of the Spansule dosage principle: "Eskabarb" Spansules (available in two strengths) for the continuous, even sedation of phenobarbital over a prolonged span of time.

Eskabarb Spansules, unlike phenobarbital in any other form, provide 3 significant advantages: continuous sedation throughout the day or night with one oral dose; no excessive drowsiness or nervous "breakthrough;" and convenience of a single daily dose.

Varick Pharmacal Co., division of E. Fougera & Co., has prepared Digitaline Nativelle Intramuscular, said to be the first intramuscular digitoxin for safe predictable digitalization. Digitaline Nativelle in tablet form and as an intravenous solution has been utilized by physicians for many years.

The Wheaton Plastics Co. is offering a plastic-coated glass aerosol bottle to drug and cosmetic manufacturers for the marketing of many items which are inconsistent with packaging in metal containers. Perfumes and cosmetic preparations, which have not been aerosol packed for aesthetic reasons, can now be offered in shatterproof bottles, according to the company.

The plastic coating embodies sufficient tear and tensile strength to retain all of the glass if the bottle should break upon dropping. Coatings of various colors are available and are suitable for direct printing or adhesive labels.

SMART IDEA...

...and lots of folks have it...

Keeping a package of BELL-ANS* handy is second nature to thousands. That's because they have learned to rely upon BELL-ANS for prompt relief from indigestion due to excess acid.

Sealing your products with Crown Closures is a smart idea . . . and lots of packers are doing it these days. They like the way these closures free their mind from sealing problems. And they appreciate the many extra advantages Crown Closures offer them. Why don't *you* get the full story about Crown Closures? Get it from your Crown Representative . . . before you order closures again. Crown Cork & Seal Company, Baltimore 3, Maryland.

World's Largest Makers of Metal Closures.

CROWN CLOSURES

Approved by Millions of Housewives

*BELL-ANS *are made by Bell and Company, Inc., Manufacturing Chemists, Orangeburg, New York, U. S. A.*

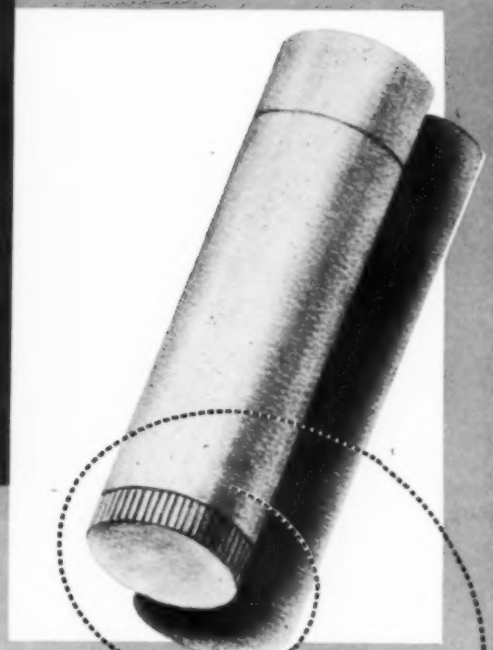
The Smartly Styled

PROPEL-REPEL

AIRTIGHT SHRINK-PROOF CONTAINER*

For Merchandising

SOLID COLOGNE · SOLID TOILET WATER
FACIAL AND HAND CREAMS
DEODORANTS · AFTER SHAVE LOTIONS



calumet **Swivelpak**®

GIVE YOUR PRODUCT THE PACKAGING IT DESERVES —GIVE YOUR CUSTOMER THE CONTENT SHE PAYS FOR

- **Purse Size, ½ ounce capacity.**
- **No molding required, product can be poured directly into container.**
- **Eliminates necessity for costly foil wrapping.**

CALUMET Manufacturing Co., Inc.

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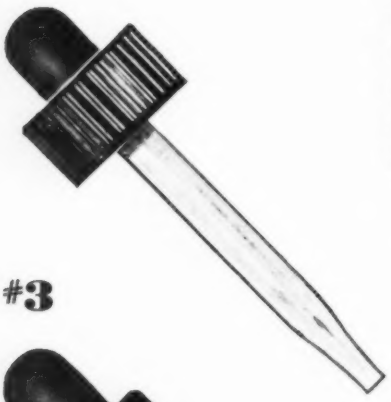
PLANTS: NEW YORK CITY, BLOOMFIELD, N. J., WATERBURY, CONN.
IN CANADA: CALUMET DIVISION OF ERIC H. HARDMAN, LTD.
137 WELLINGTON ST., WEST, TORONTO, CANADA

*PAT. PEND.

A BETTER DROPPING PART MAKES A BETTER PRODUCT

#1

#2



#3

#4

To Be SURE Your Liquid Preparation Can Be Properly Dispensed

SPECIFY

New Perfection

DROPPING PARTS

Many a fine product has been rejected by the public simply because some seemingly small detail was below standard. The dropping part can be such a detail—an apparently simple device, yet vital to the user's satisfaction.

Since 1931, when Pennsylvania Glass originated the screw-cap dropping part, we have specialized in this important dispensing unit. This advantage in experience and specialization has made NEW PERFECTION Dropping Parts everything their name implies. Longer experience and undivided attention to one product have resulted in superior quality and reliable performance. To be sure of the best—specify NEW PERFECTION Dropping Parts.

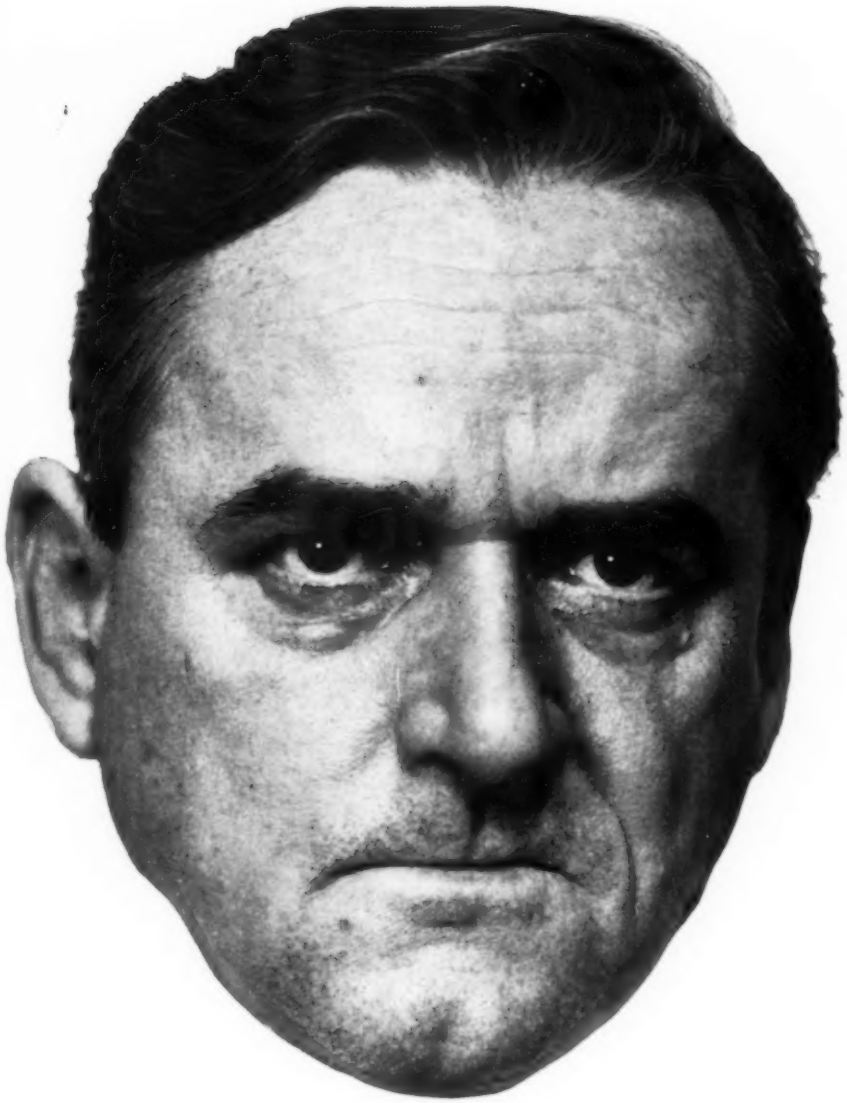
We can supply various colors of bulbs in natural rubber or in our special oil-resisting Amekine compound, caps of plastic or metal in many sizes and colors, and various types of dropper glasses in any length with calibration in any color or plain. New Perfection dropping parts will fit your own bottles, or can be supplied in combination with our Modernistic bottles in Amber, Blue, Green or Clear glass. Sizes: 2cc, ⅛, ¼, ½, 1 and 2 oz.

Write for Samples and Quotations

PENNSYLVANIA GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.



Don't worry, we make a practice of keeping our delivery promises. You can always be sure of getting your tubes on time from

Sun Tube Corporation

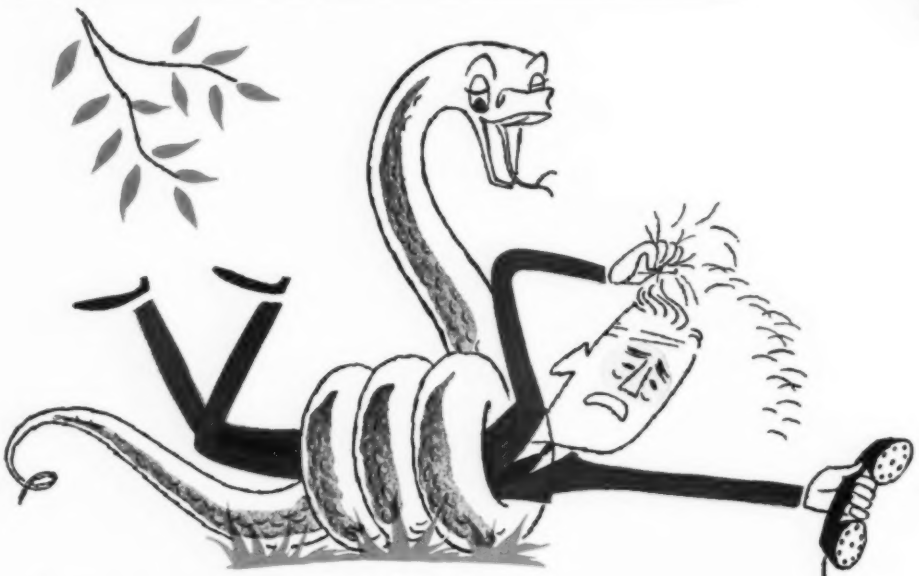
Hillside, N. J. **Waverly 3-0400**

COLLAPSIBLE METAL TUBES, ALUMINUM AND ZINC CANS

SALES REPRESENTATIVES

St. Louis 1, Missouri—Marvin Yates Co., Arcade Building
Cincinnati 8, Ohio—Ralph H. Auch, 3449 Custer Road
New Orleans 19, Louisiana—R. P. Anderson Co., 925 N. Solomon Pl.
Houston 19, Texas—R. P. Anderson Co., 5643 Overbrook Lane
Dallas 2, Texas—R. P. Anderson Co., 1122 Texas Bank Building
St. Paul 1, Minnesota—Alexander Seymour, 712 Pioneer Building
West Coast—Wm. J. Stoepker, 301 E. Colorado, Arcadia, California
Canada—Sun Tube Corp., 145 Spruce Street, Ottawa, Ontario
Mexico—Tubos de Estano, S. A. de C. V., 174 Oriente No. 267, Colonia Moctezuma, Mexico, D. F.

Schoettle Case Histories:



true story of a

Purchasing Agent in a Tight Squeeze

CASE HISTORY #78 Here's one where the whole office ganged up to put the Purchasing Agent in a tight squeeze: Customer* had to get a packaged spotlight on the market quick . . . competition was already out and our customer had to have a smart new package . . . Sales Department had been slow, now wanted all kinds of speed . . . management was yelling for boxes . . . Such an order, at top speed, usually takes 6 to 8 weeks. We pulled the PA out of the tight squeeze by delivering in 3 weeks, *from scratch!*

CASE HISTORY #88 Our customer* (a large food chain), ordered new cake boxes. No hurry. Plenty of time. Then, suddenly, Purchasing Agent yelled he was in a tight squeeze: must have order completed on original date—but greatly increased quantity . . . Schoettle mill connections and facilities went to work . . . brought the full quantity to the customer right on time!

Schoettle can often do the "impossible" because of unusually excellent facilities and resources, the kind of cooperation that clicks on behalf of a customer who finds himself in a tight squeeze for quality boxes—fast! It will pay you to look into Schoettle service . . . it's saved many a Purchasing Agent many a grey hair!

*name on request

EDWIN J. SCHOETTLE CO.

533 NORTH ELEVENTH STREET • PHILADELPHIA 23, PENNA.

Designers and Manufacturers of Paper Boxes with Buy Appeal

News . . .

Montgomery Heads Fritzsche

Frederick H. Leonhardt, president of Fritzsche Brothers, Inc., has been elected to the newly created office of chairman of the board. He joined the firm in 1894 and became president in 1934.

John H. Montgomery, first vice-president, has succeeded Mr. Leonhardt as president. He joined Fritzsche in 1925, having previously had wide executive experience in the essential-oil and chemical fields.

Other officers also elected include: H. Paul Wesemann, first vice-president; John L. Cassullo, treasurer; D. A. Neary, secretary; Ernest S. Guenther, second vice-president; Fred H. Leonhardt, Jr., third vice-president; Joseph A. Huisking, fourth vice-president; G. A. Wohlfort, assistant treasurer; Arthur Hemminger, assistant secretary; and Ellis Merkl, comptroller.

FREDERICK H. LEONHARDT

Schering Executive Elections

Francis C. Brown was reelected president for another year at the recent meeting of the board of directors of Schering Corp. Robert E. Waterman, Dr. John N. McDonnell and Dr. Edward Henderson were named vice-presidents, together with M. J. Fox, Jr., as treasurer.

Irving H. Jurow, general counsel, was elected secretary, succeeding Dr. Henderson who has held that post since 1940 and has been director of Schering's clinical research division since 1945. Miss M. Virginia Jacobs was elected assistant secretary, having formerly been administrative assistant to the president.

Vick Buys Extruded Plastics

Vick Chemical Co. has acquired Extruded Plastics, Inc., Norwalk, Conn. according to E. L. Mabry, president, who stated that this is another step in the Vick diversification program of acquiring manufacturers of specialty products in expanding markets.

Extruded Plastics' transparent containers, marketed under the trade name, Tulox, are used for most of the well-known tooth brushes, for cosmetics and toiletries, and for many other items.

Charles E. Slaughter, founder of the firm, and inventor of the processing machinery, will continue to head Extruded Plastics as president and general manager, with headquarters in Norwalk.

Anderson, V. P., Squibb

Carl E. Anderson, formerly plants general manager for domestic manufacturing, has been appointed vice-president and director of operations by E. R. Squibb & Sons division, Mathieson Chemical Corp., according to John C. Leppart, president.

JOHN H. MONTGOMERY

Heyden Exec. Appointment

Arthur R. Broadman has been elected vice-president of Heyden Chemical Corp. in charge of engineering and purchasing, according to Simon Askin, president. He has been assistant vice-president of Heyden in charge of engineering since 1948 and is a director of St. Maurice Chemicals, Ltd.

de Waldkirch Visiting U.S.

Dr. Alfred de Waldkirch, production manager of L. Givaudan & Cie., S.A., Vernier-Geneva, Switzerland, recently arrived in the United States for an extended visit to the Givaudan-Delawanna plant.

On Hoffmann-La Roche Board

Dr. Max F. Furter, vice-president, and Donald A. Brisbane, treasurer, of Hoffmann-La Roche Inc., have been elected to the board of directors and the executive committee.

Couch Raised to Fellowships

Daniel L. Couch, of Elizabeth Arden Sales Corp., and one of the founding members of the Toilet Goods Association's Scientific Advisory Committee, has been honored by being raised to the Fellowship of the Royal Institute of Chemistry of Great Britain and to the Fellowship of the Canadian Institute of Chemistry.

He has been a Fellow of the British Chemical Society since 1909, and is also a Fellow of the Royal Society of Arts, American Chemical Society and the Fellowship of the Society of Chemical Industry.

Mr. Couch, having started in 1903, has many years of scientific experience behind him—in England, France, the United States, Canada and South America.

DANIEL L. COUCH

Stamper, V.P., Lilly (Canada)

J. R. Stamper, formerly district manager of Eli Lilly & Co. in Capetown, Union of South Africa, has been named vice-president and general manager of Eli Lilly & Co. (Canada) Ltd., with headquarters in Toronto. He will be responsible for the over-all operations of the Canadian company, according to to Forrest Teel, president of that subsidiary.

Stock, V.P., Mathieson

Fred J. Stock has been appointed a vice-president of the commercial development division of Mathieson Chemical Corp. He had formerly been assistant to the director of the drug and pharmaceutical divisions.

Sturtevant Buys Micronizer

The Sturtevant Mill Co., Boston, manufacturer of grinding and pulverizing equipment, has acquired all interests for the Micronizer, manufactured by the Micronizer Co., Moorestown, N. J. This includes all rights of manufacture and sales including the registered trade-marks and goodwill of the company.

The Micronizer is a jet pulverizer for grinding or reducing solids into micron ranges.

Forster, Hercules President

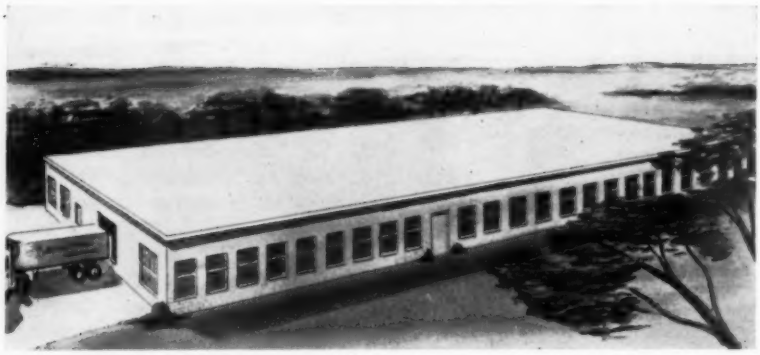
Albert E. Forster has been elected president of Hercules Powder Co. and chairman of the executive committee, succeeding Charles A. Higgins, retired, who has been president since 1939 and chairman of the board since 1944. He will continue in the latter post.

Mr. Forster has been vice-president and a member of the executive committee since 1951 and was elected a director of the company in 1940.

ALBERT E. FORSTER

Win CIBS $250 Award

Phyllis J. Carter and William C. Griffin, research chemists of the central research laboratory of Atlas Powder Co., received a joint award of $250 at the 18th annual convention luncheon of the Toilet Goods Association last month. The award, sponsored by the Cosmetic Industry Buyers and Suppliers' Association, was presented by Robert A. Armstrong, of Goldschmidt Chemical Corp., CIBS president, to the two recipients for having submitted the best scientific paper, "Fatty Acids in Cosmetics," before the Scientific Section of the Toilet Goods Association during 1952, in the judgment of the Editorial Board of Proceedings of the Scientific Section.



Drawing of addition to Kolmar Laboratories' Port Jervis, N. Y., plant which will be completed in September. Expansion has resulted from increased business in the East.

Receives Grant from Lilly

W. J. Van Wagtendonk, a member of the department of Zoology at Indiana University, received a grant from Eli Lilly & Co. on June 1, under which he will investigate the steroid requirements on Paramecium aurelia in axenic medium and also the interaction of steroids.

Furman Named V. P. by Uhe

Gerald S. Furman has become vice-president in charge of the medicinal department of the George Uhe Co. He will also head the import and export activities of the department. For the past four years, Mr. Furman has been with Gane & Ingram.

Hopkins with Guardian Chem.

William T. Hopkins, formerly sales manager of the Rapidol Distributing Corp., has been appointed general sales manager of Guardian Chemical Corp., according to Alfred Globus, president.

Mallinckrodt Exec. Changes

Robert F. Mason, representative of Mallinckrodt Chemical Works in New Orleans since 1950, has become district manager in Atlanta, succeeding William J. Deas, who is retiring. Gude A. Wilkinson, in addition to his Houston responsibilities, will add other Gulf points including New Orleans, formerly covered by Mr. Mason.

WILLIAM J. DEAS

Robert A. Armstrong (left), Goldschmidt Chem. Corp., and CIBS president, presenting Phyllis J. Carter and William C. Griffin, research chemists, Atlas Powder Co., with $250 joint award for prize-winning scientific paper, at TGA meeting last month.

Now... a deodorant compound that needs no deodorant

Lorothidol*

Tests prove that this important new bacteriostat will not develop odor in soap on aging— will not mask perfume.

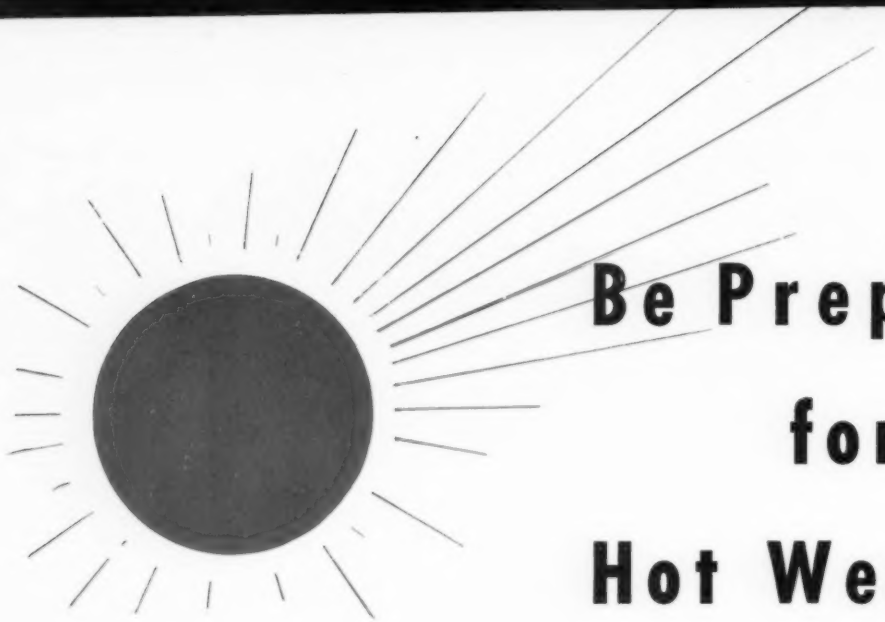
HOW IT WORKS—Lorothidol prevents the growth of many pathogenic micro-organisms, especially gram positive cocci. Over 90% reduction of resident skin bacteria is accomplished by use of only 1% Lorothidol in soap because Lorothidol has a marked affinity for the skin.

WHAT IT ACCOMPLISHES—Since bacteria-free perspiration is known to be virtually odorless, the bacteriostatic properties of Lorothidol, in preventing growth of bacteria on the body, can effectively eliminate body odors caused by perspiration.

EXCLUSIVE PROPERTIES—Lorothidol does not develop any phenol odor in bar soap on aging, nor does it cover or mask delicate perfumes or effect the decomposition of perfumes. *It has no color.* Tests indicate that Lorothidol is non-sensitizing and non-irritating to human skin. Its lack of toxicity is unusual in a bacteriostatic deodorant compound. It has been found to have extraordinarily good compatibility with most toilet goods formulations. Hilton-Davis will be glad to consult with you on the use of Lorothidol in your products.

*Trade-mark, Hilton-Davis Chemical Co. Div.
Brand of 2,2'-thiobis (4, 6-dichlorophenol)

THE HILTON-DAVIS CHEMICAL CO. DIV.
CINCINNATI, OHIO



Be Prepared for Hot Weather

TEGIN • TEGACID

Emulsifiers That Suit Your Formulations To A

T

Sun Tan Preparations

TEGIN Emulsifiers are widely used in sun tan creams and lotions. Both TEGIN and TEGIN P are compatible with most modern sun screening agents. They are easy and simple to use. They have proved their worth through decades of acceptance by American cosmetic manufacturers. **Basic formulations for sun tan preparations available on request.**

Anti-Perspirant-Deodorant Preparations

TEGACID is the symbol for stability in emulsions. Simple and easy to use, TEGACID produces stable emulsions with acidity as high as pH 2.3. It is extensively used in anti-perspirant-deodorant preparations. **Complete technical data on request.**

GOLDSCHMIDT

CHEMICAL CORPORATION

153 Waverly Place, New York 14, N. Y.

SERVING INDUSTRY FOR A QUARTER CENTURY

SALES REPRESENTATIVES

BOSTON • CHICAGO • LOS ANGELES • ST. LOUIS • MONTREAL • TORONTO

McCambridge in New Plant

McCambridge & McCambridge Co., pharmaceutical and proprietary manufacturers, have moved from Baltimore to a new plant at Riverdale, Md. Started 40 years ago by John F. McCambridge, Sr., in Baltimore, the company has engaged in the manufacture and packaging of such drug trade items as aspirin, saccharine, rubbing alcohol, vitamins, a variety of wet and dry pharmaceuticals, and cosmetics.

New office and plant of McCambridge & McCambridge Co. at Riverdale, Md., which contains 29,000 square feet of floor space. Building houses manufacturing and packaging operations, in addition to warehousing and research.

Shulton Expands in Canada

Shulton, Inc. has expanded its operations considerably in Canada by opening up new territories, additional sales staffs, and by increased national advertising. All national magazine advertising in the United States now lists Toronto with the New York office.

Neil R. Miller has been appointed to cover Vancouver, British Columbia, in addition to the Prairie Provinces and Lakehead. David Grant has been appointed a Shulton representative for the Ontario market.

New P-D Office in Havana

Parke, Davis & Co. has opened a new 25,000-square-foot branch office and manufacturing laboratory in Havana, Cuba, according to W. R. Jeeves, vice-president and director of overseas operations. The plant is equipped to produce the 1,000 medicinal products in the Parke-Davis line, will serve physicians and pharmacist throughout Cuba.

O. Castagnet is branch manager at Havana, while Dr. Orestes Lecuona is the manufacturing superintendent.

Emery Sales Meeting

Emery Industries recently held a week-long sales meeting which ended with the awarding of prizes to winners of an "idea" contest for sales promotion and advertising. Of the 16 prizes, top money went to D. R. Eagleson of the Chicago Office. Second prize was won by F. L. Ekstrand, Philadelphia; and third prize, by H. D. Armitage, New York district manager. Mr. Armitage also won in the golf tournament with a low gross score and received the golf trophy.

The conference concluded with a visit to Emery's ozone-oxidation plant for producing dibasic azelaic acid and monobasic pelargonic acid.

Bezard Heads De Laire, Inc.

Francois de Laire, director general of Fabriques De Laire, has returned to Paris after a sojourn here of 4 weeks. While in New York, Mr. de Laire opened the new offices of De Laire, Inc., 114 East 32nd St., N. Y. 16, where complete stocks and laboratories for customer convenience will be maintained. The company will be the exclusive representative of Fabriques De Laire in the United States and Canada.

Louis Bezard has been elected president of the new concern.

Kuehn, V.P., Heyden Export

Ernest G. Kuehn has been elected vice-president of Heyden Export Corp., according to Simon Askin, president. He has also been appointed manager of Heyden Chemical Corp.'s export division.

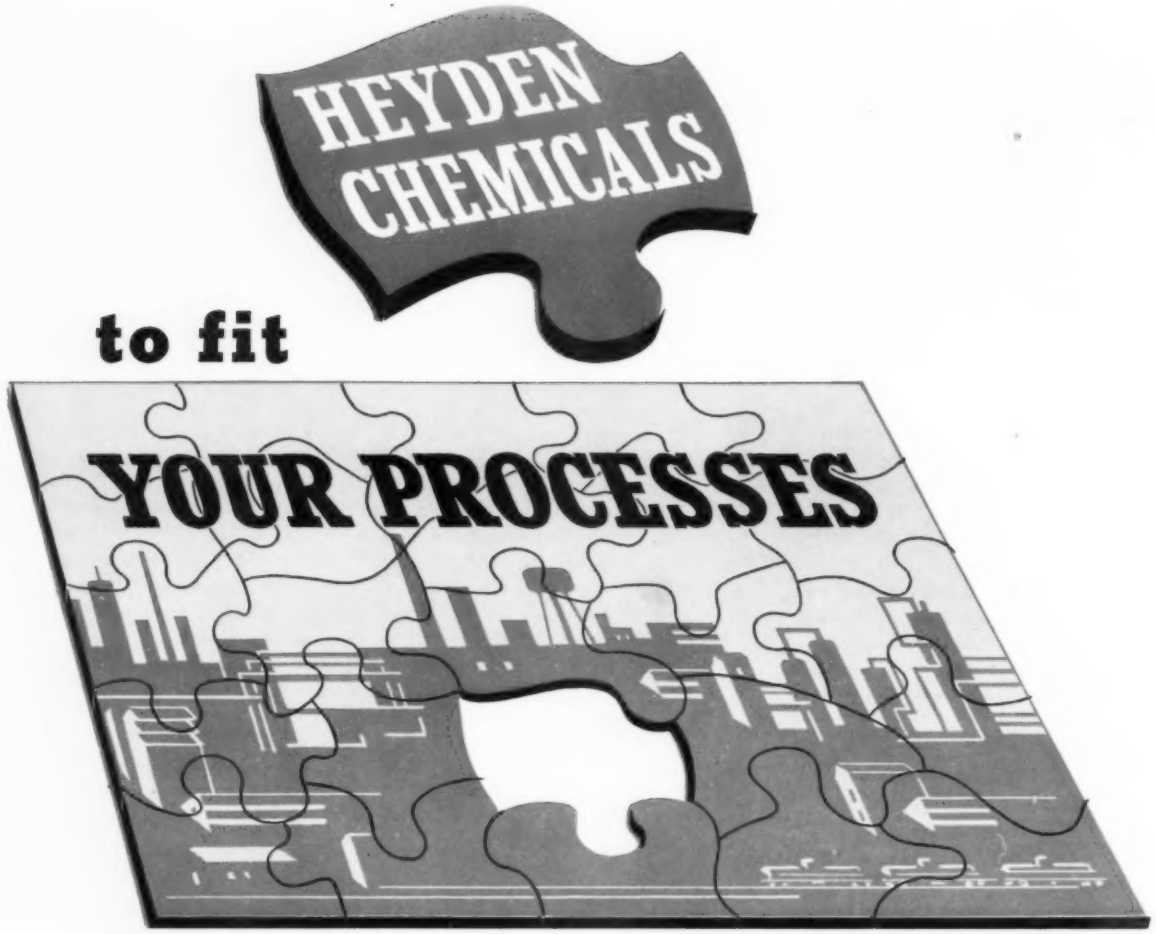
Named J & J Director

C. J. Wibbelsman, president and director of the Autograf Brush & Plastics Co., an affiliate of Johnson & Johnson, has been elected to the board of directors of the parent company.

FRANCOIS DE LAIRE

LOUIS BEZARD

Attending recent Emery Chemical Sales Meeting are, left to right, seated: R. D. Aylesworth, R. F. Brown, J. P. Clancy, W. A. Colby, L. J. Hadobas, A. R. McDermott, R. J. Roberts, H. D. Armitage, and K. K. Boyd. Second row: J. M. Washburn, A. Moore, N. A. Ruston, E. L. Spencer, J. A. Funk, L. E. Francis, W. H. Shields, T. L. Reiling, F. S. Ekstrand, J. R. York, and A. C. Fusaro. Back row: J. W. Ritz, E. V. Sack, J. P. Kramer, C. T. Burgess, N. F. Reinert, W. T. Meinert, D. R. Eagleson, W. J. Siemens, and V. W. Colby.



In the chemical process industries, the starting material must fit as exactly as the last piece in a jigsaw puzzle, to give a perfect finished product. Heyden chemicals, through research, long manufacturing experience and strict quality control, are made to fit the most exacting standards. Industrial organic chemicals, fine chemicals, antibiotics...these Heyden products have found uses in almost every process industry, as well as in medicine and agriculture.

Benzaldehyde	Formic Acid	Salicylic Acid
Benzoic Acid	Glycerophosphates	Salicylates
Benzyl Chloride	Guaiacols	Sodium Benzoate
Chlorobenzaldehydes	Hexamethylenetetramine	Sodium Formate
Chlorobenzoic Acids	Pentaerythritols	●
Chlorobenzyl Chlorides	Paraformaldehyde	
Chlorotoluenes	Parahydroxybenzoates	Penicillin
Creosotes	Propyl Gallate	Streptomycin
Formaldehyde	Resorcinol	Neomycin

FINE HEYDEN CHEMICALS

HEYDEN CHEMICAL CORPORATION

342 Madison Avenue, New York 17, N. Y.

CHICAGO • PHILADELPHIA • SAN FRANCISCO • DETROIT • PROVIDENCE

ELLSWORTH R. BEEMAN

FRANK H. WHEATON, JR.

RUPERT C. WATSON

Heads Beauty Counselors

Ellsworth R. Beeman vice-president and general sales manager, has been elected president of Beauty Counselors, Inc., to succeed N. S. Walbridge, now chairman of the board.

George T. Hall, vice-president, has been appointed to fill the post vacated by Mr. Beeman.

Hartman Celebrates 75th Year

Dr. Carl G. Hartman, associate director of the Ortho Research Foundation, last month celebrated his 75th birthday, and also his 40th year of research on the life and habits of the possum, a subject on which he is considered the foremost authority of all time.

Dr. Hartman, who is widely known in the field of obstetrics and gynecology, has just completed a book on the possum, America's only indigenous species. This marsupial, says Dr. Hartman, has been extremely useful in medical research because it is a virtual embryo at birth.

Florasynth Expansion Begins

Florasynth Laboratories has acquired the building and grounds, formerly belonging to the Borden Company, at 900 Van Nest Ave., New York City. This large structure will give Florasynth an additional 70,000 square feet for production, shipping and office facilities.

Until the necessary installations are completed, the company will maintain production facilities at both the new plant and at the present one, located at 1513-1533 Olmstead Ave.

The executive and general offices will be moved into the new quarters this month, according to William Lakritz, president, and complete production will be set up by the early part of 1954.

Wheaton Honored by Millville

Frank H. Wheaton, Jr., president of the Wheaton Glass Co. and Wheaton do Brasil, S. A., has been selected as the outstanding citizen of Millville, N. J., by the board of trade. The award is conferred annually on that person who, during the preceding year, contributed most to the civic and industrial advancement of the city.

Rider Elected President

Thomas R. Rider has been elected president of Winthrop-Stearns of Canada Ltd., according to Dr. Theodore G. Klumpp, chairman of the board, and president of Winthrop-Stearns Inc. He succeeds Charles B. McDermott who has been elected vice-president and director of sales and promotion of Winthrop-Stearns.

Before assuming his present position, Mr. Rider had been vice-president in charge of sales of the Canadian firm.

With Manhattan Soap

Charles L. Copeland, for the past 20 years division manager of Harriet Hubbard Ayer, has joined Manhattan Soap Co. as vice-president and general manager of its new cosmetics division. His headquarters will be in Boston.

Watson in Rhodia Position

Rhodia, Inc., 230 Park Ave., New York, has appointed Rupert C. Watson manager of its re-established line of aromatic chemicals, perfume specialties and bases. Mr. Watson brings to his new connection a background of 24 years' experience in the aromatic sales field.

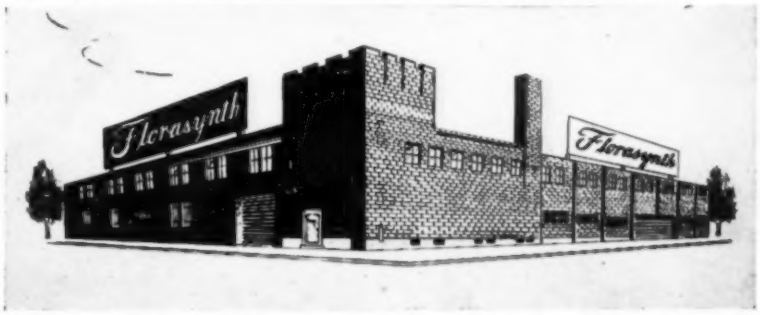
The Rhodia organization was founded and incorporated in 1948 with Raymond J. Picard as president. At that time the business was devoted primarily to pharmaceuticals, chemicals and plastics.

Wrisley Appointments

John Hehnke has been appointed field sales manager of Allen B. Wrisley Co., to direct field operations in the drug and grocery divisions, according to George A. Wrisley, Jr., general sales manager, who also announced the following appointments.

William A. Wright has become merchandising manager in charge of the merchandising programs in both the drug and grocery divisions; L. Norton Wrisley, as sales manager of the drug division, replacing Paul Litkowski who resigned; and Ira O. Fash, assistant to the general sales manager

Drawing of Florasynth Laboratories' new plant at 900 Van Nest Ave., New York, which will provide an additional area of 70,000 sq. ft. of production, shipping and office facilities under the most modern conditions. Production will begin early next year.



Our finest quality glass stoppered bottles for perfume and toilet water

Tester Bottles

Left: No. H-900 (footed)
No. S-7222 elongated stopper

Right: No. H-900
No. S-300 elongated stopper

No. 352

Available in 7 sizes from ⅛ oz. to 8 oz. Supplied plain or with fired-on ceramic labels.

No. 435

Made in 3 sizes only—½ oz., 1 oz., 2 oz. Available plain or decorated.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • *New York Office:* 40 W. FORTIETH ST. • *Chicago Office:* 1572 MERCHANDISE MART

Mathieson to Buy Powell

Mathieson Chemical Corp. has completed negotiations which will lead to the acquisition of John Powell & Co., Inc., as well as its subsidiaries and associated companies, according to Thomas S. Nichols, president of Mathieson, and H. Alvin Smith, president and treasurer of Powell.

John Powell & Co., founded in 1923, has been a leader in the development and formulation of insecticides, herbicides and rodenticides. Four basic grinding and mixing plants to serve pesticide formulators are operated at Brooklyn; Atlanta; East Omaha, Nebraska; and Elkton, Maryland. Sales offices are located throughout the United States, and a technical service laboratory is maintained at Port Jefferson, Long Island.

The integration of Powell's broad distribution system into Mathieson's agricultural chemicals business will make it possible to further expand Mathieson's operations throughout the United States and foreign countries. The management of Powell will continue as a part of the Mathieson organization, and the present policy of service and assistance to Powell's customers will be continued and stregthened by the merger.

Mathieson, with headquarters in Baltimore, has total assets of more than $320 million, production of millions of tons of basic chemicals annually, 20 United States manufacturing plants and 17 foreign plants and licensed distributing throughout the free world.

Since 1948 Mathieson has increased its sales 497 per cent; net income after taxes, has risen by 362 per cent; and gross assets have risen 388 per cent.

Vick Philippine Plant

The new $500,000 factory of Vick International, Inc., division of the Vick Chemical Co., in the Philippine Islands was recently dedicated at ceremonies at which President Elpidio Quirino delivered an address citing the new factory as a major factor in the growing success of the government's economic development program.

The factory, three miles out of Manila on Avenue Buendia, will produce 20 million units a year of Vicks Cough Drops, Vicks Va-Tro-Nol, Vicks Vapo Rub and other products. This is the first modern proprietary medicine plant in the Orient and the most modern factory of its kind in the world, according to the company.

JAMES G. VAN HORNE, JR.

Van Horne Named Sales Mgr.

James G. Van Horne, Jr., has been appointed sales manager, boxboard, by the American Coating Mills division of Robert Gair Co., according to J. C. Hendricks, general sales manager of the folding carton division. His headquarters will continue to be at the Elkhart, Ind., plant.

ALBERT CARROLL

Carroll Elected by A.N.A.

Albert Carroll, advertising manager, Merck & Co., has been elected chairman, for a one-year term, of the chemical group of the Association of National Advertisers.

Armstrong Sales Meeting

More than 100 members of the Armstrong Cork Co. glass and closure division field organization met with members of the research, sales, engineering and divisional production staffs at a 3-day general sales meeting in Lancaster, Pa., on May 6, 7, and 8.

The meeting, which was supervised by R. H. Hetzel, general sales manager, was devoted to plant tours and addresses by general company officers and glass and closure division executives.

Speakers included Mr. Hetzel; C. J. Backstrand president; J. C. Feagley, vice-president and general manager of the division; P. S. Holmquest, manager of glass and closure sales; J. M. McCormick, manager, Crown sales; V. A. Game, manager of metal and molded cap sales; G. M. Scattergood, manager of prescription container sales; R. L. Acklin, manager of corks and "Cel-O-Seal" sales; T. W. Holland, manager of "Cel-O-Seal" sales, E. I. du Pont de Nemours & Co.; W. J. Marshall manager of planning and scheduling, film department, E. I. du Pont; J. H. Houser, du Pont advertising and promotion of "Cel-O-Seal" sales; Roy Minet, manager of glass and closure division advertising; Max Banzhaf, director of Armstrong advertising and promotion, who substituted for S. W. Menefee, Jr., manager of promotion and sales training, and unable to attend; and W. E. Hoadley, Jr., economist and manager off commercial research.

Members of Armstrong's research and development center who participated in the program were Edmund Claxton, director of the center; E. C. Emanuel, director of glass and closure research; and section heads of glass and closure research, J. M. Sharf, K. C. Lyon and J. A. Benner.

New Vick International factory in Philippines, the first modern proprietary medicine plant in the Orient. It will produce 20 million units of Vicks products a year.

Needle-Point Purity in Bulk . . .

HEYDEN

PENICILLIN, STREPTOMYCIN and NEOMYCIN

Bulk purchasers place the same confidence in the high purity and potency of Heyden Antibiotics as the physician places in the sterility of his hypodermic needle. This "needle-point" assurance of safety and quality in bulk is the result of exacting manufacturing methods—rigid laboratory supervision from culture to shipping container.

When you specify Heyden Penicillin, Streptomycin, Dihydrostreptomycin or Neomycin, your source of supply is as constant and assured as the superiority of the product itself.

BULK FORMS FOR YOUR CONVENIENCE

High-potency Penicillin, in hermetically sealed jars of 500 million units, 1 billion units, and drums. Special sizes on order.

Crystalline Procaine Penicillin G, Regular or Micropulverized, sterile.

Crystalline Penicillin G Potassium, sterile.

Crystalline Penicillin G Sodium, sterile.

Crystalline Penicillin G Potassium, tablet grade.

Streptomycin and Dihydrostreptomycin in bulk, for formulations in ointments, etc., available in 1 kilogram containers.

Heyden NEOMYCIN SULFATE—sold in BULK, sterile or non-sterile, to meet your requirements—is readily formulated into highly effective nosedrops, throat lozenges, ointments, eyedrops, lotions and powders.

• • •

Packaged forms (Vials) of Heyden Penicillin, Streptomycin and Dihydrostreptomycin are also manufactured in all popular dosages.

Write today for particulars on availability and fully detailed brochure covering all Heyden Penicillin, Streptomycin and Neomycin products.

FINE HEYDEN CHEMICALS

HEYDEN CHEMICAL CORPORATION

393 Seventh Avenue, New York 1, N.Y.

New Building for Taylor

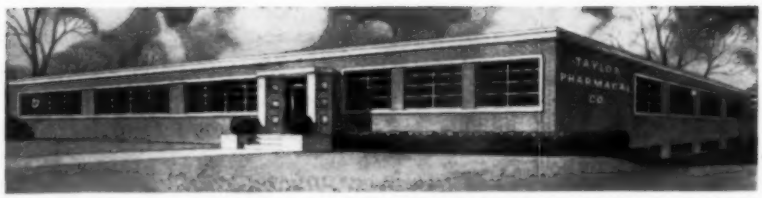
Taylor Pharmacal Co., manufacturer of injectable medication sold at the wholesale level, has begun construction of a new laboratory and office building at 1222 West Grand Ave., Decatur, Ill., which will house all company operations and double production and control facilities. The one-story structure, complete with basement, is expected to cost about $150,000 exclusive of furnishings and equipment and will be 70 by 102 feet in size.

The basement will contain the heating and ventilating equipment and will be used as the principal storage area.

A special laboratory has been designed and will be equipped especially for the sterility testing of injectables. Most of the partitions will be movable to allow for rearrangement and expansion.

Incoming raw materials will move on conveying equipment directly to the storage location in the basement, and an automatic electric elevator will raise glassware and heavier materials from the basement to the work departments.

While the company now employs 25 persons, the proposed building will accommodate double the present operation. It is scheduled for completion by November 1.



Architect's drawing of new laboratory and office building for Taylor Pharmacal Co. in Decatur, Ill. It will double production and control facilities of the company.

Chem. Sales Clinic Report

The salesmen's Association of the American Chemical Industry has published the complete proceedings of the first chemical sales clinic which was held last October in New York.

The 128-page publication in bound form includes the full texts of each prepared address and the verbatim reports of the question-and-answer periods following each talk.

Copies of the proceedings are available at $1.50 per copy from the sales clinic chairman, Ralph L. Ericsson, 6 East 45th St., New York 17. Checks must accompany all requests and should be made payable to the SAACI sales clinic committee.

Pres., Yonkers Glee Club

Henry G. Morpurgo, of the export department of Magnus, Mabee & Reynard, Inc., has been elected president of the Yonkers, N. Y., Male Glee Club. This Glee Club has entertained at MM&R's annual D.S.C. reception and dinner for the past four years. Mr. Morpurgo has been singing with the Club for 26 years and has been with Magnus for 3 years.

Dodge & Olcott Building

The Graybar-Varick Building at 180 Varick St. has been officially renamed the Dodge & Olcott Building on behalf of Dodge & Olcott, Inc., which has had its offices and laboratories at this address since 1930.

The company was originally located at 128 Pearl St. more than 154 years ago, and will celebrate its 155th anniversary in a few months.

Building at 180 Varick St., New York, which has officially been renamed the Dodge & Olcott Building. It had been called the Graybar-Varick Building.

Vick Exec. Promotions

Arthur L. Boschen and H. Smith Richardson, Jr., have been elected vice-presidents of Vick Chemical Co., according to E. L. Mabry, president. Mr. Boschen has been comptroller of the company since 1943 and will continue to hold that position. Mr. Richardson has recently been serving as assistant to the president of Vick.

H. SMITH RICHARDSON, JR.

Squibb Appointments

Joe R. Watkins has become field sales manager, E. R. Squibb & Sons, with headquarters in New York City, according to W. L. Arscott, vice-president and sales manager. He has been succeeded as manager of the Cleveland division by Frank Chatfield.

The enlarged Cleveland division now incorporates much of the territory formerly handled by Mr. Chatfield as manager of the Detroit division.

At the same time, Dr. S. B. Lee was appointed manager of the New Brunswick Manufacturing Laboratories. He will be responsible for all local operating functions.

Nat. Package Changes Name

National Package Drugs has changed its name to Drugmaster, Inc., according to C. F. Weilbacher, president. A major reason for the change of name is that more than 50 firms in the drug and pharmaceutical fields have the word, "National," as all or a part of their name, or as product brand names. This change is intended to eliminate this confusion.

The Drugmaster line includes "Wets" and "Drys," pharmaceuticals, vitamins, drugs, specialties and some sundries.

The term Drugmaster has been applied to about 771 items in the firm's line for the past 3 years. This name is a trade-mark registration owned by the firm. All products distributed by the firm will carry the Drugmaster identification either in the product name or as "Manufactured by Drugmaster, Inc."

Maywood Named Sales Mgr.

F. C. Maywood has been appointed sales manager of Anchor Cap & Closure Corp. of Canada, Ltd., Toronto, according to W. F. Wilson, president. He had formerly been manager of the San Francisco office, where he served as sales manager of Northern California for Maywood Glass Co., an Anchor Hocking subsidiary, and for the Pacific Coast closure division of the parent company.

Merck Research Center

The new research center of the Merck Institute for Therapeutic Research was officially dedicated on May 2 at Rahway, N. J., in the presence of approximately 400 scientists, educators, government officials and business leaders. The 35,000-square-foot building completes a four-year construction program which provides the Institute with one of the most modern therapeutic research centers in the country.

The construction of the research center was started in 1948, and by the following year the chemotherapy building, with its accompanying isolation building was completed. In 1950 the poultry nutrition building was finished, and in December, 1952, the center was completed with the occupancy of the new laboratory and administration building, now officially opened.

Activities of the Merck Institute comprise four general categories: research on fundamental problems aimed at adding to the general fund of knowledge; investigations into the pharmacology and toxicology of specific drugs and chemicals; assays of chemicals and drugs for potency and safety; and the development of methods and the design (and construction) of instruments needed for these purposes.

Four winners of the Nobel Prize for Medicine were among the notables attending the ceremonies: Sir Alexander Fleming (penicillin); Dr. Edward C. Kendall (adrenal cortex hormones); Dr. Otto Loewi (chemical transmission of nerve impulses); and Dr. Selman A. Waksman (streptomycin).

Governor Alfred E. Driscoll of New Jersey, spoke on "Private Research and Public Welfare," and Dr. Alan Gregg, vice-president of the Rockefeller Foundation, talked on "Education as a Pharmaceutical Adjuvant."

George W. Merck, chairman of the board of trustees of the Merck Institute, and board chairman of Merck & Co., introduced the speakers and delivered a brief address himself.

Blackwell, Corn Prods. Rep.

Tom W. Blackwell has been appointed sales representative of the Chemical sales department of Corn Products Sales Co., with headquarters in New York. He will cover 11 southeastern states.

His father completed 25 years' service with the company at its Argo Plant and retired in March of this year.

New research center of Merck Institute for Therapeutic Research which opened on May 2 when some 400 scientists and business leaders attended the formal dedication.

Penick Buys J. L. Hopkins

S. B. Penick & Co. has taken over the inventories and certain other assets, including good will, of J. L. Hopkins & Co. In explaining the move, the Hopkins firm stated, "Primarily, the decision was reached because the capital used in the business is the property of an estate, and such use of capital funds was deemed unduly hazardous by the trustees.

"Another important consideration is the change, through ever-increasing overhead expenses, in the botanical drug business. And as is well known, the general sale of the wide line of botanicals has been gradually decreasing. What is not so well known is the risky character of the business and the possibility of substantial inventory losses, with margins of gross profit extremely limited.

Rosen Forms Own Company

Karl B. Rosen recently resigned as vice-president of J. L. Hopkins & Co. to form Karl B. Rosen & Co., Inc., at 120 Liberty St., New York 6. The purpose of the new organization is to develop and distribute flavinoid compounds, particularly rutin, quercetin, dihydroquercetin and related products. At the present, the company will deal only in extractives.

McDermott Succeeds Noh

Charles B. McDermott has been elected vice-president and director of sales and promotion of Winthrop-Stearns Inc., according to Dr. Theodore G. Klumpp, president. He succeeds Joseph G. Noh, who has retired from the drug field.

Associated with Winthrop since 1926, Mr. McDermott was president of Winthrop-Stearns of Canada Ltd., prior to his new position.

Lambert Named Hon. Member

William Lambert, associated with the *American Perfumer* for over 30 years, and now editor of that publication, was made an honorary member of the American Society of Perfumers, Inc. last month during a meeting at the Advertising Club in New York. The large gathering included many new members taken in to the Society under the new provisions which open the membership to perfumers employed in the finished-package industry.

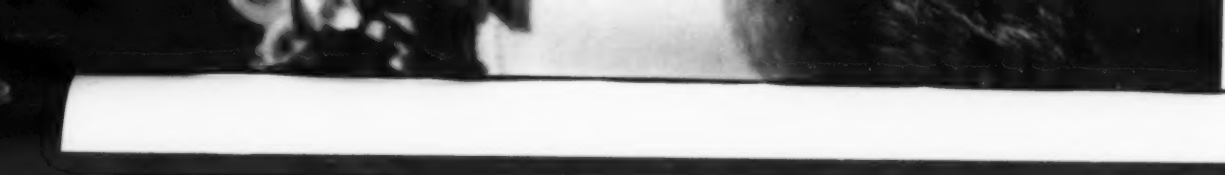
Mr. Lambert is the second man to be so honored.

WILLIAM LAMBERT

Schering Appointments

August Ryer, manager of the chemical development division, Schering Corp., and Camillo A. Orso, administrative assistant, have been appointed manager and assistant manager, respectively, of the production division.

CHARLES B. McDERMOTT



ALBERT VERLEY AND COMPANY

Announces increased production and a reduced price—on the popular

Iso Jasmone Pure

TURN THE PAGE

Effects that conform with your highest standards

with important savings to you . . .

at the new low price of

Iso Jasmone Pure

BY ALBERT VERLEY AND COMPANY

Iso Jasmone Pure is now available at only $24.00 per pound — thanks to more economical production resulting from its great popularity and from reduced costs of raw materials.

During the period of war shortages, when scarcity raised the price of the Absolute to fantastic heights, this synthesis of the Jasmin blossom made an undisputed place for itself as a veritable substitute for the natural flower in the finest compositions.

Now that the Absolute is again available, Iso Jasmone Pure continues to be a part of some of the principal formulas. It has made a permanent place for itself in the repertoire of leading perfumers.

At this new low cost, Iso Jasmone Pure is widely available as a substitute, in whole or in part, for the natural product — both in your Jasmin odors and for the Jasmin note which is so important in a wide variety of other perfume compositions, probably in some of yours. Write today for a working sample.

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466-472 W. Superior St., Chicago 10, Ill.
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Representatives in all principal cities throughout the world.

Where Your Dollars Have More Scents
Albert Verley
AND COMPANY, INC.
Headquarters for Odor Appeal

Synthetic Aromatic Products and Organic Isolates • Synthetic Flower Oils and Aromatic Bases • Bouquets and Finished Compositions

Wyandotte Chemicals Corp.'s research center, Wyandotte, Mich., which began total production on June 7 and will permit consolidation of research and development activities.

Wyandotte Research Center

The new research center of Wyandotte Chemical Corp. at Wyandotte, Mich., went into full operation last month and, according to President Robert B. Semple, will contribute further to Wyandotte's rising importance in research and development activities. The center will enable the company to expand not only its long-range research within the organic and inorganic chemical fields, but also special research projects which it is undertaking on behalf of the national defense program.

MRM Named Representative

MRM Co., Inc. has been appointed as eastern states sales and service representative for the Alloy Sales & Engineering Co. of Atlanta, according to Herman Manas, MRM president. Alloy Sales manufactures a complete line of storage and processing equipment.

Gottshall Heads Atlas Powder

Ralph K. Gottshall, executive vice-president of Atlas Powder Co., has been elected president of the company, and also chairman of the executive committee, succeeding Isaac Fogg. Mr. Fogg has become chairman of the board and will remain chairman of the finance committee.

Mr. Fogg succeeds Leland Lyon as chairman of the board. Mr. Lyon, who will remain a member of the board, has been its chairman since 1945, following his retirement from the presidency of the company.

RALPH K. GOTTSHALL

Bruyn Returns to Hooker

George J. Bruyn has been appointed adminstrative assistant to the general sales manager of Hooker Electrochemical Co., according to Robert E. Wilkin, vice-president and general sales manager.

He has just returned to the company, having recently served on the National Production Authority as chief of the Alkalies Section, and later, chief of the Inorganic and Agricultural Chemicals Branch. Mr. Bruyn has been with Hooker since 1924 and, until his Government assignment, had most recently been manager of the Niagara sales office.

GEORGE J. BRUYN

Named to Gen. Aniline Board

Elmer H. Bobst, president of Warner-Hudnut, and Melvin C. Eaton, president of Norwich Pharmacal Co., have been elected to the board of directors of General Aniline & Film Corp.

Stanton to Represent Fallek

Fallek Products Co. has named Stanton Sales Co., Chicago, as representative for such chemical specialties as fatty alcohols, cosmetic bases and sulfated alcohols. Fallek Products is the sole distributor of Dehydag of Dusseldorf, Germany.

Alexander Block

Alexander Block, founder and chairman of the board of the Block Drug Company, died of a heart attack June 2 at the age of 71.

He entered the retail drug business on Fulton St., Brooklyn, in 1907 and five years later engaged in wholesale transactions. By the late 1920's he had become a manufacturer, and since that time, introduced many well-known products, such as Amm-i-dent toothpaste and powder.

Surviving are his wife, Tillie; a daughter, Mrs. Alfred Roberts; and two sons, Melvin and Leonard.

Sydnor Barksdale Penick

Sydnor Barksdale Penick, chairman of the board of S. B. Penick & Co. and N. Y. Quinine & Chemical Works, Inc., died May 24 at Mountainside Hospital, Montclair, N. J., following a heart attack suffered a week earlier. He was 71 years old.

He began his business career with Strother Drug Co. of Lynchburg, Va., and established S. B. Penick & Co. in 1914. Mr. Penick was prominent in the affairs of the drug industry for more than a quarter of a century.

He is survived by his widow, Margaret Henry Dabney; and five children, Sydnor Barksdale Penick, Jr., John Dabney Penick, Albert Dorset Penick, Mr. Giles St. Clair and Mrs. Philip E. Nuttle; and twelve grandchildren.

Robert H. Briggs

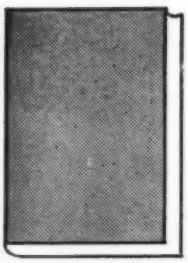
Robert H. Briggs, appointed early this year as manager of the chemical sales division of Chas. Pfizer & Co., died June 2, at Lawrence Hospital, Broxsville, N. Y. after an illness of a few days. Mr. Briggs, who was born in Cleveland 55 years ago, joined the General Chemical Company in 1925, serving as manager of its St. Louis, Philadelphia, and Chicago offices before becoming assistant sales manager in New York.

In 1943, Mr. Briggs joined Pfizer and held a number of sales executive posts before the final one which put him in charge of all domestic bulk sales of chemicals, vitamins, antibiotics, and other products.

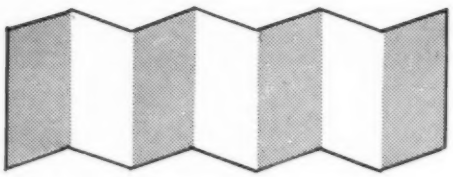
Surviving are his widow Alice Elizabeth Schnopp Briggs, two brothers and three sisters all of Cleveland, and one sister of Toledo.

E. J. Fay

E. J. Fay, of Fay's Professional Products, long active in the toiletries field, died April 18. He was 72 years old.



Trade Literature



Pododophyllin Booklet

Some New Applications of Podophyllin and Its Derivatives is the title of a 28-page booklet from the Research Division of S. B. Penick & Company, 50 Church St., New York 8.

Odor & Flavor Analysis

The scientific analysis of flavor and odor by the panel method, as used by Evans Research and Development Corporation, 250 E. 43 St., New York 17, in their organoleptic laboratories, is described in a brochure just issued.

Fisher Catalogue

What is said to be the most comprehensive line of clamps, holders and supports available to laboratories today is the subject of the new catalog issued by Fisher Scientific Company, 717 Forbes St., Pittsburgh 19. The appliances are made of Castaloy with a tensile strength of 47,000 pounds per square inch. Heavy nickel surface is used.

Witco Cork Insulation

An eight page booklet giving the composition, application and uses of Witcote No. 820 Cork Insulation is available from Witco Chemical Company, Pioneer Asphalt Division, 75 E. Wacker Drive, Chicago 1.

Dyes & Chemicals

Organic Chemicals Department, Dyes and Chemicals Division, E. I. duPont de Nemours & Co., Wilmington, Del., has issued Dyes and Chemicals Bulletins S-1 and S-2, each 12 pages. S-1 is titled Duponol WAQ and Duponol WA Paste Shampoo Formulations, and S-2 is titled Duponol EP Shampoo Formulations.

What's New for the Lab. No. 18

A new edition of What's New for the Laboratory—18th in a series—is available from Scientific Glass Apparatus Co., 100 Lakewood Terrace, Bloomfield, N. J. Included among the new items are a new line of low-priced industrial balances, a number of polyethylene aids (miniature funnel, stirring rod, scraper spatula, pipet jars, carboys, etc.), a utility water bath, duplex heater, penetrometer, wet test meter, laboratory glassware washer—plus many others.

Dehydag Booklets

Fallek Products Company, 165 Broadway, New York 6, sole distributors of Dehydag products, have available four booklets issued by Dehydag, Deutsche Hydrierwerke (Western Germany): Cosmetic bases, 12 pages; Suggested Formulas for Cosmetic Preparations, 20 pages; Biological Basic Substances for Use in Pharmacy, 12 pages; and Suggested Formulae for Pharmaceutical Ointments, etc., 16 pages.

LaMotte Chem. Controls

LaMotte Chemical Products Company, Towson, Baltimore 4, Md., has revised its catalog of Chemical Controls including pH. Fields covered are pH, chlorine dosage, swimming pool water, water, sewage and industrial wastes, refrigerating brines, electroplating, soil testing, vitamin studies, sanitation, and chemicals for research and analysis.

Croda Fatty Acids

Croda Inc., 51 Madison Ave., New York 10, has issued a folder giving information on their Crodacol range of fatty acids.

X-Ray Analysis

A new 8-page booklet titled Twenty Questions and Answers on X-ray Analysis, is available from Research and Control Instrument Division, North American Philips Company, 750 South Fulton Ave., Mount Vernon, N. Y. Text material was prepared specifically to clear up some misunderstandings that exist concerning the difference in X-ray powder camera, spectrometer, and spectograph equipment and techniques. The booklet also explains specimen preparation and describes application fields for each of the three X-ray diffraction methods. It also discusses calibration and selection of analyzing crystals for use with the spectrograph in analysis of specimens to determine what elements are present.

Metallic Stearates

M. W. Parsons-Plymouth, Inc., 59 Beekman St., New York 38, has issued a 56-page booklet entitled Metallic Stearates. Composition and analysis of metallic stearates are given in addition to the use of these products in industry. Current technical bulletins of the company's research laboratory are also included.

Wyandotte Publications

Wyandotte Chemicals Corporation, Wyandotte, Mich., has available two booklets. One, of 86 pages, profusely illustrated in color and black and white, gives complete information on organic and inorganic chemicals of the company and is being distributed by the Michigan Alkali Division. The other, of 20 pages, and issued by the J. B. Ford Division, covers the subjects of cleaners.

Q. Who controls the FOAM in

E·R·SQUIBB & SONS

The priceless ingredient of every product is the honor and integrity of its maker

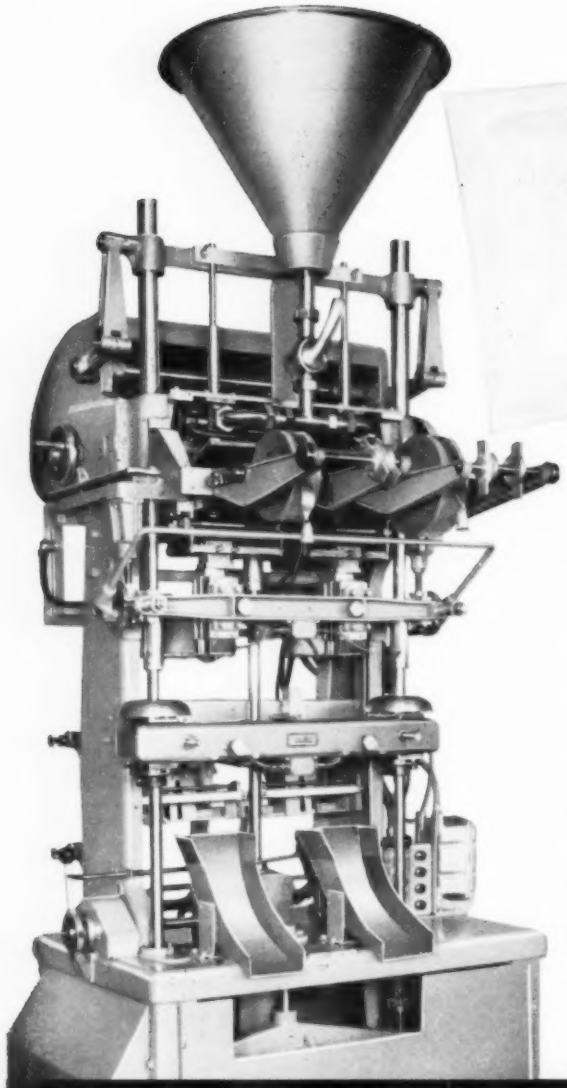
A. REGAL CHEMICAL CORPORATION

115 Dobbin St., Brooklyn 22, New York

One of the most famous slogans of all time is that of E. R. Squibb & Sons — "The Priceless Ingredient of Every Product is the Honor and Integrity of its Maker." It was natural, therefore, for Squibb to choose Regal Chemical Corporation to fill its well-known shave product. Squibb knew that if Regal packaged Lather-Foam, its performance would uphold Squibb's reputation. For Regal, soon to celebrate its tenth anniversary in the aerosol-filling industry, is truly a pioneer in the field, well-known for quality that can't be beat. The first company to employ *statistical quality control*, Regal has made aerosols since they were first discovered.

Regal's quality aerosol plant has two divisions — one for foam products, such as pressure propelled shave creams, shampoos, hand lotions and similar products, and the other for insecticides, deodorants and hair products. Regal packages only for the trade — distributes no products of its own.

Let Regal's aerosol experts help you with your filling problems. Write for full details on Regal quality laboratory controlled production. Pressure-packed toilet goods processing is a Regal specialty.



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automatically forms, fills and heat-seals an accurate amount of liquid in a smart transparent pouch at the rate of approximately 2 per second. It offers you a new up-to-the-second merchandising opportunity that's easy—fast—and economical.

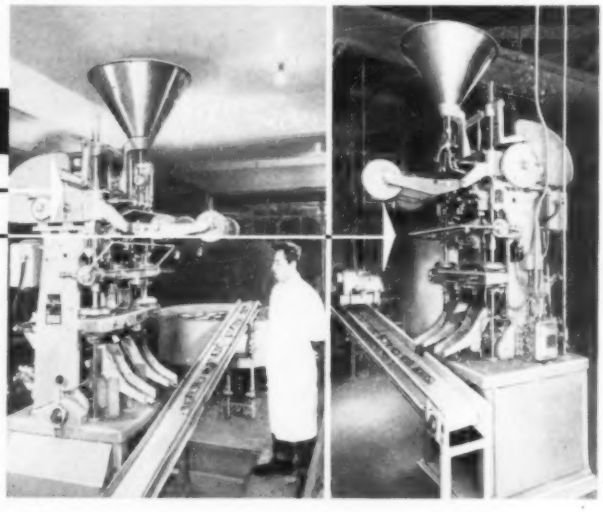
In packaging concentrated juices, bags or pouches are formed from laminated film with Polyethylene on the inside, Cellophane on the outside. The complete operation, from roll to finished package is fully automatic.

Engineered by Stokes & Smith, the STOKESWRAP is the ultimate in streamlined design and workmanship. If your product is a cream, oil, juice concentrate, or any of a host of others, there's a selling idea here for you. We'll be glad to discuss it with you, without obligation of course.

HERE'S WORKING PROOF:

Paramount Citrus Association, Inc., makers of well known Cal-Fame citrus products, packs frozen concentrate in either 1½ or 2½ oz. packages on a STOKESWRAP at the rate of 100 bags per minute.

Covina Division of Exchange Lemon Products Co., packers of Sunkist lemonade concentrates, uses a STOKESWRAP to package over 96 2 oz. samples per minute. These packages of Sunkist concentrate for frozen lemonade are helping to build consumer demand for the product.



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SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION
fmc TRADE MARK

Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

Branding Coated Tablets

Several rumors have reached me that counterfeiting high-priced coated tablets is on the increase. Hence there is a revival of interest in means of identifying coated as well as uncoated tablets. This subject is of considerable interest to me because of the work I did eighteen years ago for Grove Laboratories.

At that time the management of that company wished to introduce a coated Laxative Bromo-Quinine tablet. They wished to have the initials "L.B.Q." embossed on the coated tablets just as they are on the uncoated tablets. Such a thing could not be done through conventional coating methods. It was at once apparent to me that the coating would have to be compressed on the tablets. Hence I had some tablets made that were nearly as spherical in shape as possible and about an eighth of an inch smaller in diameter than the dies in which the compression operation was to take place.

Using a conventional rotary press the tablets were successfully coated as follows: At the point where the lower punch begins to withdraw into the die about an eighth of an inch, the bottom sugar was fed in. When the bottom punch receded about an eighth of an inch farther into the die, the tablets were dropped in. Finally, when the punch receded to the bottom, the coating sugar for the top was fed into the die. Then the loaded die passed under the compression rollers and perfectly coated initialed tablets thus were made. The tablet centers being nearly spherical adjusted themselves under compression to the center of the die allowing the coating of sugar to flow around the tablets uniformly. Cross-sections of these coated tablets showed uniform distribution of the coating material. Shatter tests showed that the coating was just as strong as coatings applied in the conventional manner. It is worthy of note that I kept a lot of these tablets in my desk for ten years and threw them away, when I moved my office from Park Avenue, because discoloration had taken place owing to the fact that the centers had not been shellac coated. The operation was accomplished at slow speed merely to demonstrate that it could be done on a conventional rotary press with slight modifications. When the tablets were submitted to the management, they were rejected because the coated tablets still looked like uncoated tablets because of the flat die mark around their horizontal perimeters.

Regardless of the Grove management's action I still think this is the best and cheapest way to coat tablets. It's about time we did away with the mumbo-jumbo of the conventional pan-coating process which has had no improvement in seventy-five years.

The management then decided that it would be better to print the initials "L.B.Q." on both sides of conventionally coated tablets and the assignment was dumped in my lap. I knew that if the printing was to be accomplished economically the process would have to be fast, expensive and fool-proof, and that moreover a suitable vegetable dye would have to be used. I did a lot of research work on the project in other fields, because I have always followed the philosophy that there's no point in developing special equipment if other industries have developed such equipment and it can be adapted to our purposes. My first field of investigation was the candy industry because I recalled that the New England Confectionery Company used to print words and even entire phrases in contrasting colors on thin candy wafers, a large roll of which was sold for a nickel when I was a boy, under the trade name "NECCO" wafers. This effort proved fruitless because the machine could not be adapted to handle tablets. I then investigated machines used for branding Sunkist Oranges, Blue Goose Grapefruit and Diamond Brand English walnuts. These machines proved that the process of branding can be carried on inexpensively at very high speed, even on irregular surfaces. But the machines were all owned by growers associations and were not available to other industries even if they could have been adapted for other purposes.

Finally I found an outfit in Germany that was making a machine to print pills and tablets. I obtained sam-

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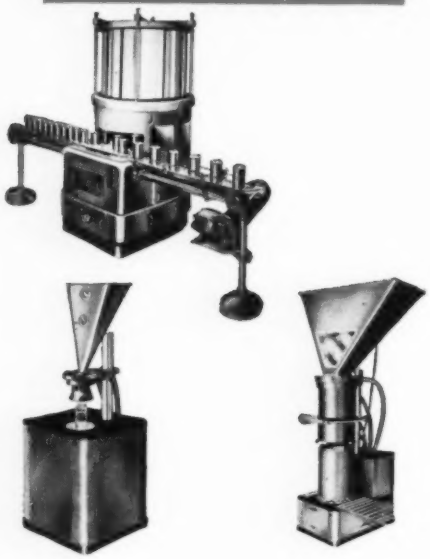
with

VACUFLOW

Dustless POWDER FILLERS

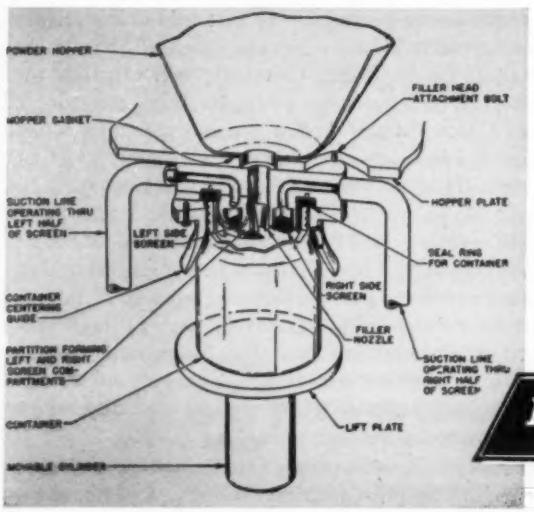


Cut Product Wastage
Obtain Accurate Uniform Fill
Cut Cleaning Costs

Pneumatic, a leading manufacturer in the packaging field since 1895, now offers a complete line of powder filling equipment — machines operating on a new principle of vacuum feeding, instead of pressure to pack the powder into its container.

Here's how Vacuflow works: Air is removed from the container to create a vacuum, which draws a measured quantity of powder from the hopper. Uniform fill is assured by regulating the powder's density with a predetermined degree of vacuum. This unique method eliminates dust because it simply does not involve air currents that *cause* dust.

Units are available to handle every powder filling requirement. This includes semi-automatic models for filling containers ranging from a tiny powder box up to 200 pound drums and multiple head rotary models for automatic handling of 5 pound sizes or less, at speeds of 45 to 300 per minute. Pneumatic invites your inquiry.



Pneumatic Scale Corp., Ltd., 70 Newport Avenue, Quincy 71, Massachusetts. Branch Offices in New York; Chicago; San Francisco; Los Angeles; Seattle.

PNEUMATIC
LOWER COST PER CONTAINER

PACKAGING AND BOTTLING MACHINERY

ples of pills some ofwhich were only an eighth of an inch in diameter and yet were clearly and legibly imprinted with the word "Quinine." Investigation of this machine proved that it was too slow for production scale use as we know it.

In the meantime the management of Grove Laboratories placed coated Bromo-Quinine tablets on the market at a premium price to cover the cost of coating and since the market response was negative the whole project was dropped.

Since there is a revival of interest in the subject I will tell you how I thought the job of printing on one or both sides of coated tablets can be done. Imagine a tablet supply hopper feeding ten or twenty slides or chutes, similar to those on a variety of tablet filling machines. The tablets would be fed into these chutes flat. At the bottom of these chutes there would be a rotary vacuum drum fitted with a series of small teats corresponding in number to the number of chutes. The teats would engage the tablets and by suction would carry them out of the slides. As the vacuum drum rotated it would come under an offset printing head consisting of an inking roller and an offset roll fitted with raised dies. The inked dies would come into contact with the tablets and imprint them. By having another vacuum drum to engage the printed tablets in the manner above described the vacuum could be broken by an internal shoe in the first drum at a given point, thus permitting transfer to a second vacuum drum so that the second drum could carry the reversed tablets under a second printing head. In this way the coated tablets could be printed first on one side and then on the other.

The second method of printing the tablets which I thought about at the time, was to carry the tablets on a vacuum belt similar to the one used on Stokes & Smith setup box labeling machines. This vacuum belt would carry the tablets under rotary printing heads. I think the drum idea is better and more compact and it would be a lot simpler to reverse the tablets in case it is desired to print on both sides. A third method would be to channel tablets on a belt sorting machine similar to the Lakso machine and run them under printing heads.

It is perfectly obvious that if the vacuum drum idea proves to be practical, it would be perfectly simple to count the printed tablets directly into containers. This vacuum drum idea is the essential element of my patent on tablet counting equipment.

"The Economist"

Geoffrey Crowther, editor of the famous British periodical, "The Economist," has this to say about American business methods:

"I notice more and more that British industries are sending teams of explorers over to try and find out what is the secret of your exuberant, your buoyant productivity. I hope that they will be able to find the magic prescription that produces such wonderful material prosperity in your country. When they have found the prescription, and when we have made up the bottle of medicine in England, I don't think that we shall ever want to drink the lot."

"A Creed for Free Enterprise"

In this powerful book Clarence B. Randall, President of Inland Steel Company, has some powerful things to say. It would be a happy thing for this country if all American business men had his ability, his vision, and his capacity for translating that vision into clear, flowing English. But since the majority of us are far below Mr. Randall's stature we should listen carefully to what he has to say and try our utmost to put his recommendations into practice each in our own field of endeavor.

"What a change," writes Mr. Randall, "could come in this struggle for men's minds if suddenly there could pour out from the world of American business a torrent of intelligent, forward-looking thinking, flowing straight from the hearts of thousands of the fine men who lead our institutions, that would tell not only the miracle of production, but the hopes and aspirations for a better world which I know these men actually do hold. The mass impact for good of that leadership would be irresistible. . . .

"Psychologically, however, my generation of management men has one severe handicap to overcome in achieving public leadership. Our approach to social questions is apt to be negative. Our habit of thought is to be against things, and we have little skill in creating concepts that people will be for. We have raised invective to a fine art, but developed little capacity for throwing on the screen of our national consciousness pictures that evoke enthusiasm and admiration. With brick and mortar and stainless steel we are the greatest builders the world has ever seen, but our daring and confidence seem to leave us when we walk out of the plant into the realm of ideas."

Industrial Printing

I have boasted about being the means of causing the discontinuance of more privately operated printing plants than any man in the industry. But once in a while I run into doubting Thomases who refuse to believe that printed matter, wisely bought, can always be obtained at prices lower than the cost obtainable through the operation of a private plant regardless of how well equipped and efficiently it is operated. More proof of the pudding came to attention recently in the announcement by Procter & Gamble, that as of January this year they discontinued their print shop and sold all their equipment. The scale of this operation may be visualized by the fact that the equipment disposed of included 30 large offset and letter press printing presses, with all the auxiliary equipment and binding machines. Since Procter & Gamble had very large runs of relatively few items they were in an ideal position to do their own printing if it had proved economically feasible to do so. Procter & Gamble is a well managed outfit and is not noted for wasting money. If P & G cannot oper-

FIRST FULLY AUTOMATIC UNIVERSAL TUBE FILLER, CLOSER AND CRIMPER at extreme low price

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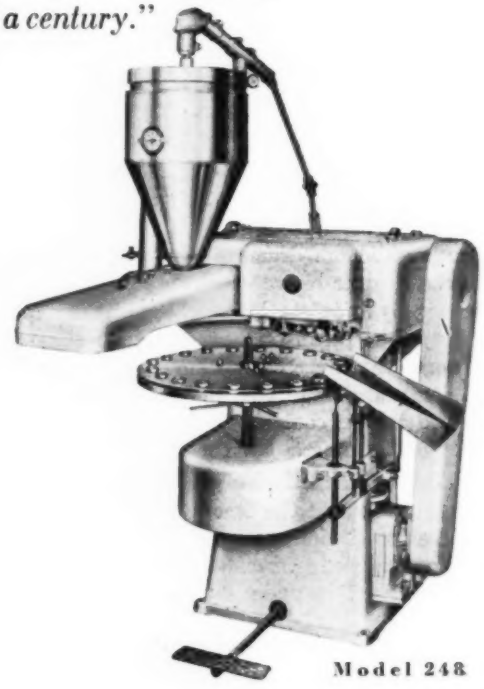
We proudly present GASTI most modern filling and packaging machines. "Famous the world over for half a century."

Model 248

- **Capacity—55 tubes per minute**
- **Tube size—Up to 1¾″ dia. by 9″ long**
- **Size change-over made in 3 minutes**
- **Cap tightener**
- **Two-three or quadruple fold**
- **All stainless steel contact parts**
- **All features of the most modern machines**

Available in models up to 85 tubes per minute.



Model 248

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ate a printing plant economically you are kidding yourself if you think you can. Many manufacturers who still operate their own printing plants kid themselves into believing their costs are lower than market prices Sometimes they get competitive bids to prove their costs are lower. They are kidding themselves because they don't know how to buy printing. The secret of buying printed matter economically is to know precisely the nature and type of the printer's equipment. Obviously you can get a better price on a four-color job from a printer who has multi-color presses than you can from a printer who has flat bed presses only and who must perforce run the sheet four different times to produce the final product.

The printing industry is so highly competitive that those who are engaged in it can survive only by keeping all their equipment operating all the time. By so doing the printer not only achieves greater efficiency and lower overhead but his volume places him in a position where he can get volume prices on paper, ink and auxiliary materials. Such conditions are utterly unobtainable in any private printing plant.

Politics and the Business Man

Business men generally complain about taxes, complain about inefficiency in government, yet the individual businessman will not lift a finger to make government more efficient and less expensive to operate. Whenever businessmen get a government contract they treat Uncle Sam, whenever they can get away with it, as Uncle Sucker. Government officials, on the other hand, accept inefficiency as inevitable and complain that they cannot get first-class businessmen in the government because businessmen avoid any kind of service that lessens their income and they also outbid the government for the services of qualified specialists, especially scientists.

The national economy is based upon business. *It is business*, in the collective sense. Business should be operated by businessmen and not by professional bureaucrats.

Every businessman will agree that every other businessman should personally participate in the affairs of government. In other words, if there is any hard, underpaid work to be done, let the other guy do it. The average businessman's excuse for not taking a personal part in the affairs of local, state or federal governments is that he is too busy.

The average businessman, by that I mean the heads of business organizations, is too busy because the majority of them are so incompetent. Their personal work is not efficiently organized to give them free time. They give a great deal of lip-service to the ideal of delegating authority and never really do anything about it, excepting to a limited degree. They waste a lot of time in useless conferences and committee meetings, simply because their organizations are not properly set up and staffed. If their organizations were properly set up and authority properly delegated, the majority of the subjects endlessly discussed at endless meetings would never even come to the attention of Mr. Bigbrow at all. If the head of the average company didn't waste so much time on trivia, he'd have plenty of time on his hands to devote to the affairs of government about which he complains so much.

The head of every business should have a lot of free time on his hands, and when he hasn't you can take it from me he is not efficiently conducting the affairs of his own business. It seems to me that the larger our business affairs grow, the less efficient their conduct becomes. The efficiency of an organization seems to be in inverse ratio to its size. Talk about delegation! I have been in many large plants where the Plant Manager lacked authority to make capital expenditure in excess of $50. In some large plants they have no authority to make any purchases whatsoever. They must submit requests to finance committees *ad infinitum*. Efficiency is an American dream, more talked about than realized. Until businessmen find time to cut the Gordian knot of the red tape that entangles them, so that they can devote more time to the affairs of government, our government will continue to be inefficient on a larger and larger scale as the years go on. The economy is created by businessmen collectively and collectively they should run it—if they will.

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Combination Single- and Double-Faced Pallet Truck

Designed and developed by the Market Forge Company, the *Combination Single- and Double-Faced Load Lift Pallet Truck, Model SD*, is the answer to the problem many companies have where both single and double-faced pallets are used.

The "Model SD" is made entirely of steel. The front wheels are 10″ x 3″ and equipped with sealed ball bearings. The rear wheels are 3¼″ diameter by 3¾ face and are also equipped with sealed ball bearings.

The head room (space ahead of the pallet) is a minimum, only 14¾″—not including 2″ space for overhanging loads, which allows the truck to be maneuvered in narrow aisles when necessary.

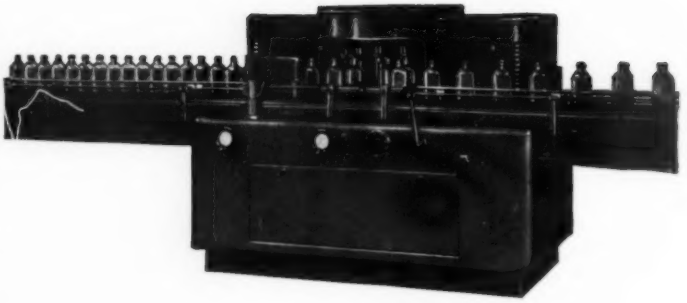
The truck has a full 4″ lift—can also be furnished with hinged adaptors to allow it to be used with skid platforms up to 12″ underclearance when necessary.

The over-all width is 27″. Forks are 9¼″ wide and the opening for the center runner of the pallet is 8½″ wide; simple hydraulic lifting mechanism; heavy duty 5th wheel steering arrangement; balanced spring handle hold up. The truck has been approved by the U. S. Navy after exhaustive and severe tests.

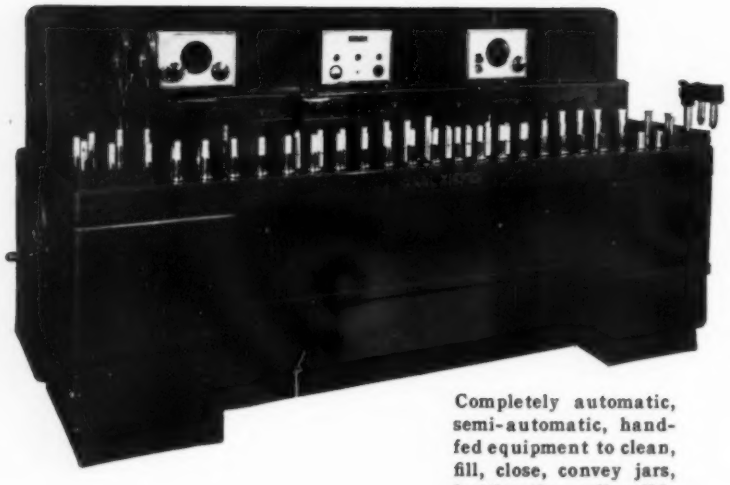
It is available in 3000 lb., 5000 lbs., and 10,000 lb. capacities, and with either steel, rubber or plastic wheels from the manufacturer, Market Forge Company, Everett, Massachusetts.

KIEFER
BOTTOMS UP
BOTTLE CLEANER

A tried-and-tested machine that INVERTS and CLEANS bottles! As the compressed air rushes in, OUT goes the dirt. Smooth, continuous, clocklike operation all day long. (sixty to eighty lbs. of filtered compressed air does the trick). A large high-speed fan collects everything expelled, into a bag.



TWO FAITHFUL KIEFERS DESERVING WORK IN YOUR PLANT



Completely automatic, semi-automatic, hand-fed equipment to clean, fill, close, convey jars, bottles, tins, collapsible tubes.

KIEFER
ENDWELD TUBE FILLER
and SEALER

An all-around marvel. It either FILLS liquids or solidly PACKS pastes into tubes up to 1½" diameter. Insures a fast, neat, accurate, no-waste job which includes WELDING the tube end into a trim, dependable package. Fold and corrugation follow, if desired. Tube size change-over simple. Device for counting tubes filled, helps you figure your dividends thru saving of tube length by this ENDWELD UNIQUE METHOD.

●

FILTERS

The Karl Kiefer Machine Co.

CINCINNATI, U. S. A.

NEW YORK SAN FRANCISCO BALTIMORE CHICAGO BOSTON LOS ANGELES SAVANNAH LONDON, ENGLAND

New Micro-Particle Air Filter

The removal of air-borne particles as fine as those making up tobacco smoke (.05 to 0.1 micron) from the air by means of dry filter paper has now become a practical means for protecting industrial products and processes, industrial workmen's health, for hospital uses, and for laboratory research.

Although the filter material having this superior quality has been in use since the war years when it was developed for military gas masks, it has only recently been put into a simple unit suitable for general use. This material is a porous, matted paper made from a pulp containing the extremely fine Bolivian or African Blue asbestos fibers and cellulose Esparto grass fibers. Moisture resistance is provided by treatment with a precipitated, hydrated calcium silicate known as Silene.

The final product is .035 to .045 in. thick. When fan-folded over corrugated paper spacers and sealed into a frame, the resistance of the filter unit at a flow velocity of 5 ft. per min. through the filter media is only 1 in. of water at temperatures between 65 and 75 deg. F.

Four filter sizes with capacities up to 1000 cu. ft. per minute have been standardized in order to meet a maximum of user requirements from distributors' stocks. In the largest standard size about 300 sq. ft. of filter media are provided in a compact unit 24 x 24 x 11½ in. overall. Any desired size can be obtained however if quantity requirements or special circumstances justify production.

Development of the M. S. A. Ultra-Aire Space Filter dates back to the war years when the Chemical Warfare Service needed a better filter for gas masks. After its development, it was found suitable also for the extensive needs of the Atomic Energy Commission for removing radioactive particles and other toxic particles in the air. Other uses quickly followed.

Performance of the material is measured by the NRL Penetration Meter using dioctyl phthalate smoke from a DOP smoke generator. At least 99.95 per cent of the particles in this smoke, which are 0.3 micron in diameter (about 12 millionths of an inch), must be removed in inspection tests of every filter.

A filter unit consists of a continuous sheet of the filter paper fan-folded over specially prepared corrugated paper. Folds in the sheet are on the exposed faces of the filter unit and corrugations of the separators are perpendicular to the filter faces, thus forming passageways to and from the surfaces of the filter material. Corrugations are V-shaped instead of the common U-shape in order to minimize the contact area and to expose a maximum surface area of the filter paper to the air. The number of folds varies slightly with the thickness of the filter paper and the heights of flutes in the corrugated separators but is close to 150 in the largest filters.

Construction of the filter unit is simple but subject to rigid specifications to assure no leakage during the life of the filter. Frames are of top grade lumber, put together with a rabbeted joint. Sealing adhesive is used plentifully in the joints and on the inside of the wood frame where it is applied in two coats. Trimmed ends of the folds are filled or stiffened with several spray coats of diluted adhesive, after which the bedding application can be sprayed or brushed on. The adhesive remains tacky between coats in order to form a continuous homogeneous bond between the media and frame. Gaskets of ¼-in. unicellular sponge rubber on the edge of the filter frame seals them into ventilator ducts or filter banks.

In testing the completed filter unit the test stand is flooded with dioctyl phthalate smoke to establish a 100 per cent reading. The system is then purged and a filter unit placed in the duct. DOP is again introduced and penetration through the filter is measured by means of a photoelectric cell which operates as a particle counter under the conditions of the test. Regulation of particle size and determination of particle intensity are governed by special equipment developed by the Chemical Corps and Naval Research Laboratory. The method is more reliable than those based on weight or strains. Filters showing 0.05 per cent or more passage of DOP particles are rejected. Others are marked on the side with the results of the test.

Filter life depends on the number and size of particles contained in the air, the rate of air flow, and the end resistance that the system can handle. In one test with "normal industrial city air," a filter of 1000 cfm capacity was operated at full capacity 24 hours a day for three months before its resistance increased from 1 to 2 in. of water.

An end resistance of 4 in. water gauge is practical if the system permits. If a low pressure system can handle only an additional pressure drop of 1 in. of water, filters must be operated at flow rates less than rated capacity. Two 1000-cfm filters might be used for every 1000 cfm, with 500 cfm through each. Initial resistance would then be 0.5 in. water gauge and the filters would be discarded when resistance increased to 1 in., the system capacity. Longer life could be obtained by using four of these filters in parallel, starting with a resistance of 0.25 in. of water.

The life of filters should be increased by using coarser filters ahead of them so that they have only the finer particles to remove from the Air. Air contamination should be reduced to a maximum of 1 grain per 1000 cu. ft. before it is economically practicable to use the Ultra-Aire filter. At this concentration a 1000-cfm filter would remove a pound of dirt in 117 hours of operation.

Filter units may be sealed directly in air ducts or hoods, or built into a wall singly or in banks. Either face of the filter unit may be the inlet or outlet for air flow but the direction of flow should not be reversed during the life of the filter. Mountings should provide not only for an effective, continuous seal around the frame but also for quick and easy exchange of filter units.

By far the largest application of this filter material so far has been for health protection of people working in atomic energy plants where radioactive, air-borne

The Fast Automatic Crandall Counter is IDEAL for Producers of Tablets, Pills or Capsules

Here's Why!

The Crandall . . .

1. handles practically all types of coated or uncoated tablets, pills and capsules
2. can be equipped for any count
3. handles bottles, cans or cartons
4. runs at speeds up to 60 bottles of 100-count per minute—faster where counts are lower
5. can be equipped for automatic or semi-automatic operation

The original Crandall Tablet Counting Machine is manufactured *only* by **US.**

. . . and here is an important added feature—

The Crandall can handle several different products simultaneously. By dividing the hopper, the Crandall can count several products at the same time. Thus, if you are making small volumes of a variety of products, you can set up the Crandall to suit your exact requirements with a minimum of effort.

Full details are yours for the asking. Write today.

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dusts must be kept from spreading. Tests indicate that no other filtering medium or material gives as comparably high a factor of safety in protection against the finest particles.

With this performance, the filter can be used instead of expensive installations of equipment for destroying bacteria such as those producing ultra-violet light, using instead a means of retaining them outside of areas where they could do harm, such as hospital rooms housing patients with contagious diseases. Post-operative infections may be checked by having the air supply of operating rooms pass through these filters.

For the protection of health and as a protection against contamination that may be caused by an individual's breathing, the material has also been made by M. S. A. into respirator filters which may be used to protect either the wearer of the mask or to filter our exhaled bacterial particles that might affect sterile conditions in the production of pharmaceuticals, in food processing, or other processes in laboratory or production operations.

An indication of the possibilities for filtering out undesirable bacteria is the fact that the largest industrial users of this filter material other than atomic energy plants are manufacturers of pharmaceuticals. There are several installations for enclosed systems in which antibiotics are made. In these systems air is supplied by compressors, and filters are used on the intake to remove air-borne dusts and bacteria.

Similar problems are encountered in food processing plants which may be solved more satisfactorily than before with this filtering material. An interesting use of an 8 x 8-in. Ultra-Aire filter has been made by a tank car transporter of molasses. As the tank is drained the air that replaces the molasses has to pass through the filter, thus keeping the tank free of bacteria, avoiding high spoilage of residual molasses and reducing the amount of cleaning that had been necessary when ordinary un-filtered air filled the tank.

Protection against radio-active particles in the air is a problem that is not confined to protection of personnel. In the manufacture of photographic film and sensitized paper the presence of these particles affects the quality of the film. Since the number of these particles in the atmosphere may gradually increase, filters are being used in one plant experimentally to determine their effectiveness in keeping such particles as well as other inert dust away from film production processes.

Fine dust alone is sufficient to be detrimental in the processing of film, particularly motion picture film that will be greatly magnified on a screen. For this reason alone one of the leading motion picture producers uses filters for protection against inert dust.

Manufacturers of clear and light colored plastics have a dust problem also. In the manufacture of plastic lenses the greatest care must be taken to filter out all dust particles. In the manufacture of paint there is a dust problem in connection with obtaining reproducible light colors.

In the textile industry one of the biggest dust problems is with synthetic yarns that develop electrostatic charges which attract dust. Dust particles both discolor and abrade the yarns during weaving and spinning operations unless they are removed from the air surrounding these processes.

Air that is completely cleared of all dust particles is also essential in the manufacture of delicate instruments and in the utilization of these instruments. This is especially true where large panels are required and the cost of keeping small exposed moving parts clean is high, as it might be in the maintenance of telephone circuit equipment and radio station sending equipment. Manufacturers of television tubes must be sure that no dust gets inside the tube, particularly as a protection for the fluorescent coating.

Research laboratories now have at their disposal new possibilities for the elimination of atmospheric contamination. These are as widely varied as control of purity of cultures used in experimentation with animals and chemical and physical experimentation where the greatest possible precision in results depends on freedom from every possible source of contamination and error.

Ultra-Aire filters are Mine Safety Appliances Company. Contact Ketchum, MacLeod & Grove Inc., 411 7th Ave., Pittsburgh 19, Pa. and be sure to mention Drug and Cosmetic Industry.

Jaw-Sealing Machine

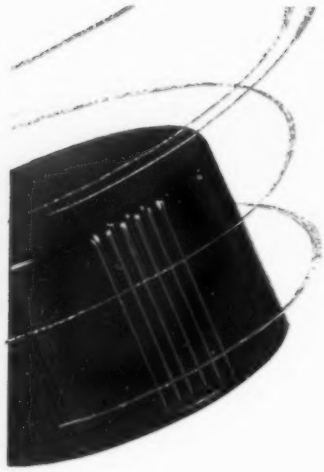
Amsco Packaging Machinery, Inc., have developed a high speed automatic jaw sealing machine embodying all the essential features to make perfect heat seals for which their automatic rotary sealing machines are well known. Heat, pressure, and dwell time are all fully controlled automatically.

Maximum heat penetration to inner sealing bag surfaces is achieved by the use of cartridge type hermetically sealed heating elements mounted in both sealing jaws. Heat is controlled and instantly adjustable to the requirements of the material being sealed by a supersensitive dial type thermostat.

The machine is equipped with an automatic folding bar which eliminates the necessity of the operator placing the bags between the jaws prior to sealing. The folding bar automatically guides the bag tops between the jaws for either straight sealing or folding and sealing. The automatic folding bar in addition to increasing production also prevents the possibility of spillage from the open end of bags as the bag tops are fed into the machine in a vertical or near vertical position.

Special leveling plugs permit angling of the sealing jaws for the most comfortable and efficient operating position. The following sealing surfaces are available—crimp, flat or flat with horizontal bead. The standard dimension of sealing surfaces are 1" wide by 12" long.

Made by Amsco Packaging Machinery, Inc., 31-31 48th Avenue, Long Island City 1, New York.



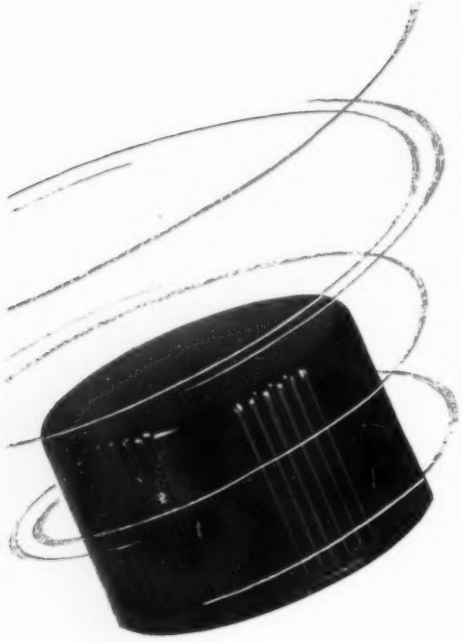
Faster Capping

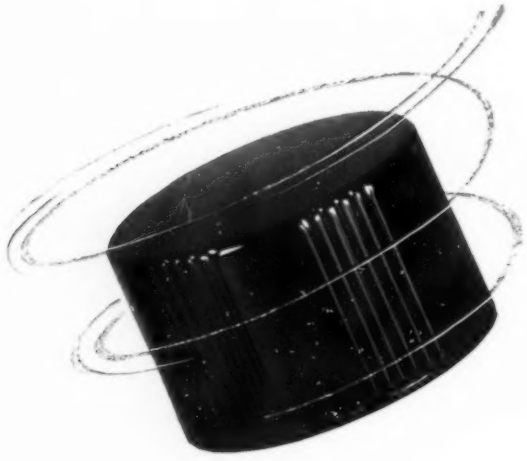
"Hi-Tork" Caps are designed to take the torque and impact of high-speed machines

If cap breakage is slowing down your high-speed capping machines, try Armstrong's "Hi-Tork" Caps. These closures are specially molded to take the abuse of modern high-speed equipment. Their extra strength will permit you to speed up your lines—increase your output—with a minimum of downtime and rejects.

"Hi-Tork" Caps are designed so that dome, thread, and skirt each takes its proportionate share of stress. Extra plastic has been added at critical points, and the recessed design leaves no projections to chip or cause breakage. Re-designed thread contours give a better seal with less strain on the cap.

Test "Hi-Tork" Caps in your own plant. You'll be amazed at the punishment they'll take. For further information, call your near-by Armstrong office or write Armstrong Cork Co., Glass and Closure Division, 5306 Chambers St., Lancaster, Penna.





ARMSTRONG'S *Hi-Tork* MOLDED CAPS

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DAY

PHARMACEUTICAL PROCESSING EQUIPMENT

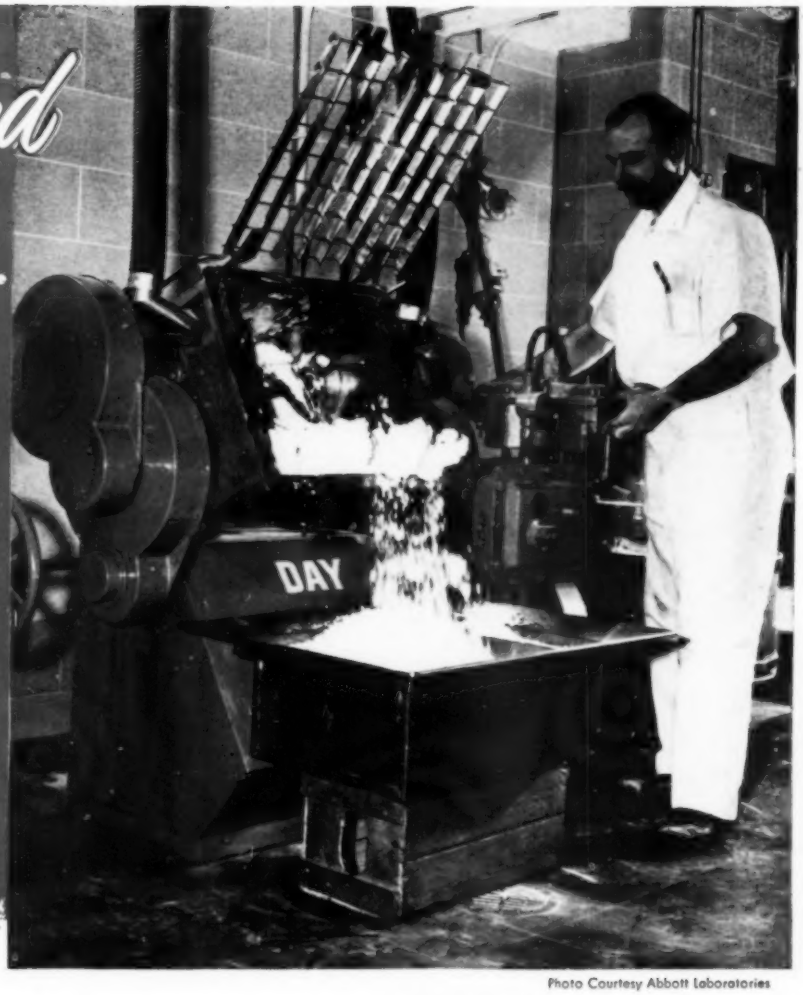

Photo Courtesy Abbott Laboratories

Efficient method for wet granulation is shown in this picture of a Day Stainless Steel Double Arm Mixer, used to combine powder and binder in the manufacture of medicinal tablets.

Pharmaceutical plants, with their emphasis on precision production and sanitation, are no place for makeshifts. That is why Day equipment, designed specifically for the job at hand, is first choice among so many drug and cosmetic manufacturers.

One example is the Day Double Arm Mixer. Counter-rotating sigma type agitators, operating at a 3 to 2 ratio, insure fast, thorough mixing action. Dependable gear drive and power dump are standard features. Finally, Stainless Steel tank and agitators are big aids to maintenance of high sanitary standards.

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Operator pours tablet compound into a Stokes Model DS-3 tabletting press in the Hawthorne, California plant of Strong Cobb & Co., Inc. 30,000 to 60,000 tablets are produced per hour by this method.

Finished tablets, after coating, as produced on Stokes presses at Strong Cobb & Co., Inc., world's largest private formula manufacturer.

"How well we do our work may decide whether someone lives or dies"

This legend is posted over the employee's entrance at the Strong Cobb & Co., Inc., plants in Cleveland, Ohio and Hawthorne, California. It typifies the unceasing vigilance with which this firm, the largest private formula manufacturer in the world, has worked since 1833 to produce pharmaceuticals of the highest quality.

Tablets, in approximately 1000 different sizes, shapes and forms, are turned out on four Stokes rotary tabletting presses at the new Hawthorne, California, plant of Strong Cobb & Co., Inc. Production ranges from 30,000 to 60,000 tablets per hour, depending upon the material used. Yearly production runs well over one and one-half billion tablets.

All Stokes tabletting presses, whatever the size of tablet or speed of operation, produce tablets perfect in size, weight, density and finish, with maximum efficiency and little labor. Pharmaceutical manufacturers may consult with the Stokes Advisory Service and Stokes field engineers, without obligation, on such problems as tablet formulae, punch and die design, and improved manufacturing and operating procedures.

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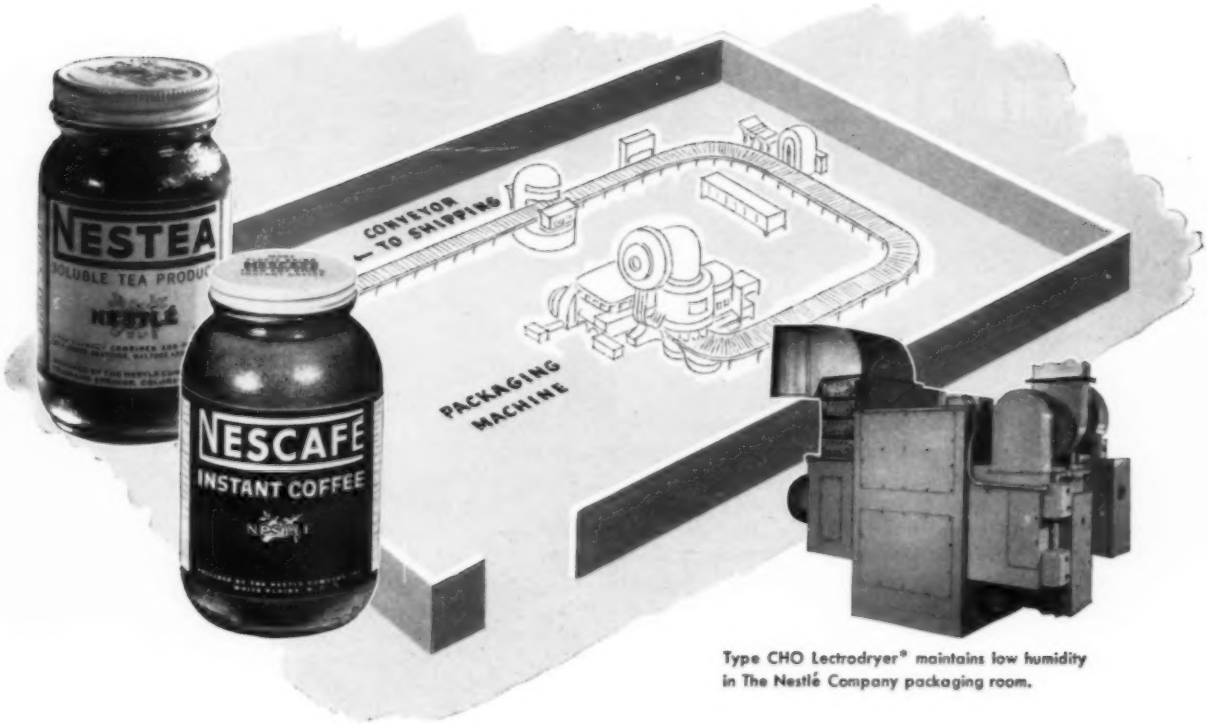

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"Our packaging machines don't gum up in summer any more . . ."

Summer air can contain above 500% more moisture than winter air. No wonder machines gum up! No wonder production stalls! A CHO Lectrodryer has cured these ills at the Nescafé* plant of The Nestlé Company, Inc., Sunbury, Ohio. Summer or winter, the air in packaging rooms is DRY. Production flows smoothly.

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Advancing Therapy

Drug Trials in Amebic Dysentery

It is pointed out by G. A. Martin, B. T. Garfinkel, M. M. Brooke, P. P. Weinstein and W. W. Frye (*J. A. M. A.* 151:1055, 1953) that the therapy of amebiasis is still a controversial issue and various amebacides have their individual proponents. Recently antibiotics have been added to the list of drugs demanding consideration. An unusual opportunity to observe the response of acute amebic dysentery to therapy occurred in the United Nations prisoner of war camp in Korea. In this study, the value of emetine, carbarsone, chiniofon, bismuth glycolylarsanilate (Milibis), chloroquine, oxytetracycline ("terramycin"), aureomycin, and chloramphenicol was compared in a series of 538 cases of acute amebic dysentery. Carbarsone, chiniofon, chloroquine, and chloramphenicol used alone had minimal therapeutic value in this disease. Emetine and aureomycin alone and the combination of bismuth glycolylarsanilate and chloroquine diphosphate (Milibis-Arlen) gave a good initial response but a high relapse rate. Emetine, carbarsone, and chiniofon combined gave an excellent initial response and a moderate relapse rate. Oxytetracycline alone and in combination with (1) emetine, (2) carbarsone, (3) chiniofon, and (4) chloroquine diphosphate, (5) bismuth glycolylarsanilate and chloroquine and the combination of aureomycin and chloroquine diphosphate all gave excellent initial responses and the lowest relapse rates observed. Additional studies of the more promising treatment schedules are considered advisable.

Gastric Antisecretory Drugs

According to J. B. Kirsner and W. L. Palmer (*J. A. M. A.* 151:798, 1953), the ideal gastric antisecretory agent applicable to the treatment of peptic ulcer may be characterized as a safely administered compound that consistently inhibits the output of hydrochloric acid for long periods after oral ingestion, without development of tolerance and with minimal or no side effects. Numerous drugs have been synthesized for this purpose, but thus far none completely satisfies these requirements. Following their observations on 16 of the newer gastric antisecretory compounds, with particular reference to their influence on basal gastric secretion and to the occurrence of side effects, these investigators feel that the following conclusions are justified: 1. The inhibitory action of antisecretory drugs on gastric secretion in man varies greatly, especially after oral administration. 2. There is wide individual variation in the occurrence and severity of side-effects with the same dose of an antisecretory drug and in the same subject on different occasions. Compounds most effectively decreasing gastric secretion also tend to cause more side effects. 3. None of the currently available gastric antisecretory drugs consistently produce anacidity in man without side effects. Nevertheless, an increasing number of compounds are being synthesized that are capable of inhibiting the continuous gastric secretion in man, with apparently diminishing toxicity.

Pityrosporum Ovale and Scalp Conditions

The part played by the organism *Pityrosporum ovale* in the etiology of a number of conditions of the skin has been much debated. By some it is held to be the prime and only cause of dandruff of the scalp and "seborrheic" ezcema of the body; by others it is denied that the organism is anything but a harmless saprophyte which thrives under the cultural conditions provided by certain diseases. In studies to clarify the picture, F. A. Whitlock (*Brit. Med. J.* 1:484, 1953) examined 200 normal scalps and the degree of infection with *P. ovale* was correlated with the degree of dandruff present. From the findings it was considered that there was no evidence to justify the theory that *P. ovale* caused the dandruff. Instead it was suggested that the degree of infection was influenced by the quantity of sebaceous secretion, and that the increased flow of sebum at puberty would explain the rise in the incidence of infection at that age. It was also noted that the amount of dandruff was heavier in the female than in the male.

The suggestion that sebaceous secretion was the main factor influencing the degree of infection with *P. ovale* was supported by the findings in scrapings taken from the skin of the nose when compared with scrapings from eyelids in 20 cases. Further support was given by the findings in nine cases of tinea amiantacea, 17 cases of psoriasis of the scalp, and 16 cases of seborrheic eczema of the scalp and trunk. In most of these dry scaly conditions the organism was absent or was found only in small numbers. The suggestion that estrogens diminish the degree of dandruff and *P. ovale* infection received no support from the findings in the 100 male and 100 female normal scalp scrapings.

On the basis of these data, Whitlock concluded that *P. ovale* is not the cause of dandruff but is a harmless organism on the scalp which thrives best in the medium provided by a heavy flow of sebum.

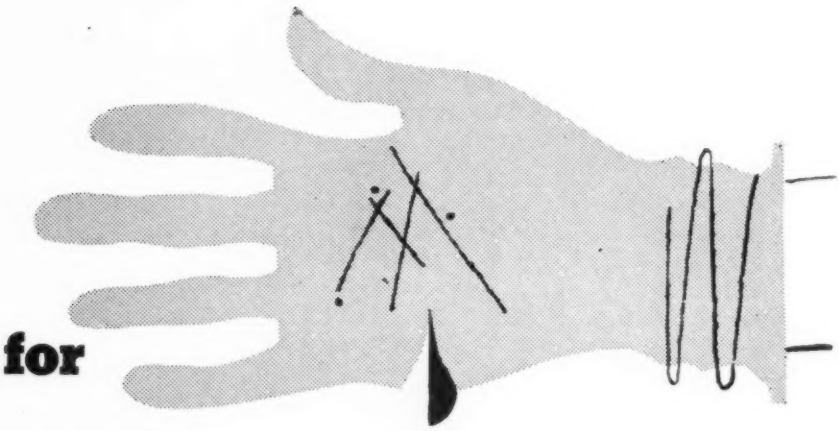
Salicylazosulfapyridine in Ulcerative Colitis

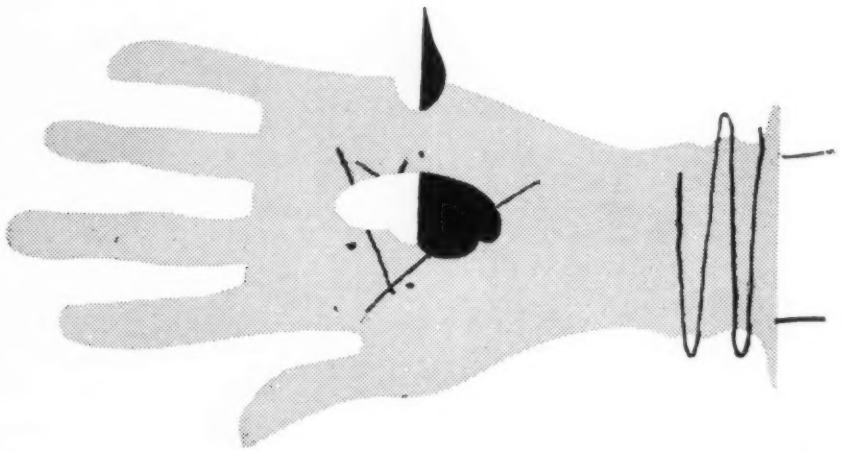
A series of 60 patients with chronic ulcerative colitis was treated with salicylazosulfapyridine and studied over a three-year period by L. M. Morrison (*J. A. M. A.* 151:366, 1953). This series was compared with a control series of 60 patients with chronic ulcerative colitis who were treated not with this drug but with other currently employed therapy under the same clinical conditions.

Intolerance to the drug occurred in 13, or 21 per cent, of patients. Of the 47 (79 per cent) patients who were tolerant to treatment 11, or 18 per cent, remained symptom free after three years as compared to three, or five per cent, in the control series. Thirty-one, or 52 per cent, of patients who had received the drug were significantly improved as compared to 19, or 32 per cent, of the controls. Sixteen, or 26 per cent, of the treated patients were relatively unchanged as compared to 32, or 53 per cent, of controls. In the treated group two, or four per cent, of patients became worse as compared to six, or 10 per cent, of the controls.

From these findings, Morrison concludes that this drug is useful in the treatment of chronic ulcerative colitis.

Kid Gloves for *A. Gross* Coconut Fatty Acids





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However, his studies, as well as those of others who have investigated the drug, indicate that further pharmacological investigation of salicylazosulfapyridine is strongly needed to develop a more potent and less toxic derivative, since the drug has clearly and repeatedly shown clinical value in the treatment of this difficult disease.

Magnamycin in Urinary Tract Infections

Magnamycin hydrochloride is a new mono-basic antibiotic possessing strong inhibitory activity predominantly against gram-positive bacteria. Preliminary tests on laboratory animals demonstrated that the drug exhibited low toxicity and did not exhibit cross resistance with other antibiotics in general use. In the study made by H. M. Trafton, H. E. Lind and M. Correia-Branco (*New England J. Med.* 243:379, 1953) 15 patients with genito-urinary infections were selected for treatment with Magnamycin because the majority had failed to respond to other antibiotics, including sulfonamides, penicillin, streptomycin, aureomycin, chloramphenicol and terramycin. Several cases in male patients were complicated by "nonspecific" urethritis or prostatitis, or both. Of this group, 13 showed clinical improvement, with bacteriologic sterility. The remaining two patients, who had infections with Magnamycin-resistant organisms did not improve. Magnamycin was found generally to be well tolerated in doses adequate for treatment of urinary infections. No serious reactions were encountered.

According to Trafton and his associates these early observations suggest that Magnamycin may prove to be the drug of choice against enterococcal urinary infections. The percentage of clinical improvement with bacteriologic sterility is high, and the number of relapses low. Magnamycin therefore seems to fill a narrow but important void in the present armamentarium against genito-urinary infections.

Phenylindanedione as an Anticoagulant

At present dicoumarol and ethyl biscoumacetate (*bis* - 3,3′ - (4 - oxycoumarinyl)-ethyl acetate; Tromexan) are the two drugs with a prothrombopenic action which are in common use as anticoagulants. In recent years, a new thrombopenic drug, phenylindanedione, has aroused considerable interest. In a clinical study made by M. Toohey (*Brit. Med. J.* 1:650, 1953) phenylindanedione has been tried as an anticoagulant in 68 patients, mostly cases of coronary thrombosis and deep venous thrombosis. It is a very effective anticoagulant which in its action lies approximately midway between dicoumarol and ethyl biscoumacetate. The dangerous cumulative effect of dicoumarol occurs to a far lesser extent with phenylindanedione, while the fact that the metabolism and excretion of phenylindanedione is less rapid than that of ethyl biscoumacetate makes clinical control of anticoagulant therapy with phenylindanedione much easier.

In this series of 68 cases 200 mg. (in two equal divided doses) was given on the first day, followed by 100 mg. on the second day. On this dosage an appreciable fall in the prothrombin level was noticed in 24 hours, and a full therapeutic effect, with a prothrombin concentration in the region of 10 to 20 per cent, was reached in 36 to 48 hours in nearly all cases. The further daily maintenance doses of phenylindanedione varied between 50 and 200 mg. Once the daily maintenance dose has been established, this dose can be continued for a prolonged period without any significant fluctuation in the prothrombin times. This uniform action of phenylindanedione means that in most cases, once the daily maintenance dose has been established, prothrombin estimations are necessary only twice or, at the most, three times a week. No toxic effects from the drug were met in this series.

Sodium Propionate-Chlorophyll Solutions

For many years, sodium propionate solutions have been used therapeutically. However as explained by S. M. Peck, E. F. Traube and H. J. Spoor (*Arch. Dermat. & Syph.* 67:263, 1953), even though the solutions were quite acceptable to most patients because of its beneficial effects, there was resistance to its continued use in some instances because of the odor problem associated with the application of the fatty acid salts. It was for this reason that they attempted to circumvent this objection by the addition of water-soluble chlorophyllin. This was a fortunate idea since the combination of the chlorophyllin and the sodium propionate for all practical purposes eliminated for odor problem. In addition an unexpected observation was made that the chlorophyllin not only acted as a deodorant but also seemed to enhance some of the therapeutic properties of the sodium propionate.

For clinical application a powder was made in which there was 99.75 per cent sodium propionate and 0.25 per cent of sodium copper chlorophyllin. The patients were instructed to dissolve the contents of an envelope (2.3 Gm.) in a glass of water (6 oz., or 180 cc.), for use as a wet dressing or a mouth wash. There resulted from this mixture approximately one per cent of sodium propionate and 0.0025 per cent of the chlorophyllin. In some instances, in which a stronger therapeutic concentration was required, two or even three envelopes of powder were dissolved in the same amount of water. In some instances, especially for foot baths, the 2.3 Gm. of the chlorophyllin preparation was dissolved in a pint (473 cc) of water.

The preparation has been beneficial as a wet dressing, mouth wash, vaginal douche and foot bath in well over 100 cases showing a wide variety of conditions. Peck and his colleagues report that the combination seems to be particularly useful because of its (*a*) more physiologic action; (*b*) lack of toxicity; (*c*) low sensitizing index; (d) bacteriostatic and fungistatic properties, and (e) soothing, healing, and especially antipruritic effects.

Hypotensive Action of Rauwolfia Serpentina

Considerable interest has been focussed on the hypotensive action of the plant, *Rauwolfia serpentina*. Pharmacological investigations by J. W. Nelson and C. A. Schlogel (*J. Am. Pharm. Assoc.*, Scient Ed. 42:324, 1953) show that preparations of *Rauwolfia serpentina* Benth. are relatively potent hypotensive agents as indicated in anesthetized normal dogs. Comparison tests with other known hypotensive agents indicate a potency of about one-tenth that of Veratrum Viride in terms of crude drug. The hypotensive activity resides in the alkaloidal fraction. Testing of the separated alkaloids shows serpentine to be decidedly more potent than the ajmaline alkaloids. Both the alcohol extract and the serpentine alkaloid produce a fall in carotid blood pressure when administered intragastrically as well as intravenously. The reduction in blood pressure is gradual and sustained. No untoward side effects have been observed with either the crude alkaloidal extract or the serpentine alkaloid and toxicity studies indicate a high therapeutic index.

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Readers' Questions

Soapless Skin Cleaners: Can you give me information on the preparation of skin cleaners for use where soap is contraindicated? I should like something similar to the liquid preparations now on the market. Wilmington.

Although I know the general composition of the preparations you refer to, their exact formulation is not available to me. However, some years ago, Dr. I. H. Blank suggested the following formula as a replacement for soap as a cleanser for the skin:

Mixed sulfonated olive and teaseed oil	**25.0 per cent**
Light liquid petrolatum	**25.0 " "**
Water	**50.0 " "**

Somewhat later, J. W. Klauder and his colleagues suggested a further modification consisting of:

Sulfonated neat's foot oil	**45.0 per cent**
Light liquid petrolatum	**45.0 " "**
Gelatin (25 per cent aqueous solution)	**10.0 " "**

The addition of one part of a 20 per cent solution of sodium lauryl sulfate imparts lathering qualities and probably makes for better detergent action, but this combination has the disadvantage of having a slight drying action on the skin.

L. Schwartz, of the Public Health Service, has developed a combination of sulfonated oil and wetting agent for skin cleansing where soap cannot be used, as follows:

Neutral sulfonated castor oil	**97.0 parts**
Pure castor oil	**1.0 "**
Synthetic detergent	**2.0 "**

Bottle Coating Compound: As you know, amber colored vials are sometimes not available in our part of the Philippines, so I would like to improvise a solution into which we could just dip the vials and thus give them a coating that would be just as if it were amber colored. In this way we could meet the demand for amber-colored and similar vials. Laguna.

I think you can achieve the desired results by using a modification of the old fashioned bottle-capping solutions that were popular a few years ago. One procedure is as follows: Soak 7 lbs. of gelatin in a mixture of 10 oz. of glycerine and 60 oz. of water. Then heat over a water bath and dissolve and then add a desired color. Pigments may be used and desirable tints can also be obtained by the use of aniline dyes. Store the jelly in jars. Just prior to use, liquefy the mass with heat and dip the bottle into the liquid which sets very rapidly. The proportions may of course be varied as desired.

Another similar-purpose preparation calls for the use of:

Pyroxylin	**5 parts**
Acetone	**50 "**
Benzene	**20 "**
Amyl acetate	**25 "**

The appropriate color is given with an alcohol-soluble aniline dye.

Absorbent Dusting Powder: Can you please give me a method for making a dusting powder with high moisture absorbency, that could be used on the legs to eliminate the clammy feeling associated with the wearing of certain types of stockings? Chicago.

A dusting powder such as you want can be obtained by using suitable absorbents like precipitated chalk, or magnesium carbonate. A body powder that can be used for this purpose consists of:

Talc	**69 parts**
Precipitated chalk, light	**25 "**
Zinc stearate	**5 "**
Perfume	**1 "**

Pine Bath Oils: We would appreciate a formula or two on the so-called Swiss pine bath oils. St. Paul.

I do not know what makes "Swiss" pine bath oils distinctive from other types. However, products of this sort can be prepared quite readily along the following lines:

Bornyl acetate	**2.0 per cent**
Sulfonated olive oil	**98.0 " "**

Another similar preparation consists of:

Sulfonated olive oil (90 per cent)	**85 parts**
Perfume compound pine	**5 "**
Water distilled	**10 "**

Dissolve the perfume in sulfonated olive oil, and dilute with water. Filter bright. Color if desired.

Compounder's Corner

Brilliantine Creams

In the opinion of N. S. Peel (*Soap, Perf. & Cosmetics* 26:275, 1953), successful modern brilliantine or hair creams of the water-in-oil type are usually based on relatively simple formulas. Nonetheless strict attention to the reliability and uniformity of raw materials is as essential as effective control of all processes and temperatures. It is particularly desirable to standardize the mineral oil and petrolatum used, to employ as low a concentration of emulsifying agent as is possible, and to work within reasonably narrow limits of oil and water.

Mineral oil is a major ingredient of brilliantine creams. In some formulations part of the mineral oil may be replaced with petrolatum. Small amounts of stearic and oleic acids or of beeswax may be present. Other potential constituents include perfume oils, preservatives, auxiliary emulsifying agents (e.g., cholesterol), glycerine and fatty acid amides. Peel also observes that small proportions of waxes are often desirable in order to enhance gloss, even though some of the most successful creams do not appear to contain waxes. Gums and gum mucilages (one per cent or more) are frequently advocated, but are not really necessary in a good, well-balanced formula. Nevertheless, they have their uses and deserve to be considered when a new product is being formulated. The alginates, in particular, are not only useful for regulating viscosity: they also enhance the fixative properties of the finished cream when applied to the hair.

In presenting several formulas for modern brilliantines, Peel stresses that the avoidance of separation in these emulsions can only be ensured by overall attention to choice of emulsifying agents, balancing of oil and water, control of viscosities, and the like. The following composition is cited as a typical example of a brilliantine composition:

Mineral oil (light)	**40.0 parts**
Petrolatum, white	**9.0 "**
Beeswax, white	**2.0 "**
Oleic acid, pale	**0.5 part**
Lanolin, anhydrous	**1.0 "**
Borax	**0.5 part**
Magnesium sulfate	**1.5 parts**
Sodium hydroxide	**0.5 part**
Water	**45.0 parts**
Perfume and preservative	**Sufficient**

Dissolve the magnesium sulfate in boiling water, 20 parts, add the caustic soda and set aside. Dissolve the borax in the remaining 13 parts of boiling water. Melt the fatty materials, mix the two aqueous portions together, and pour the latter into the fatty melt, with both mixings at 65° C. Stir at frequent intervals until the temperature drops to 45° C., then add the perfume and preservative suitably dissolved and pass the whole batch through an homogenizer.

Another formula for a brilliantine cream calls for the use of:

Lanolin, anhydrous	**1.25 parts**
Spermaceti	**5.00 "**
Beeswax, white	**6.00 "**
Mineral oil, white	**44.00 "**
Triethanolamine	**0.75 part**
Water	**36.00 parts**
Perfume oil	**1.00 part**
Diethylene glycol monoethyl ether	**6.00 parts**

Through the use of these ingredients and by pouring the hot aqueous portion into the melted fats and oils, instead of vice versa, a fairly thick water-in-oil emulsion is formed. The mixture is well stirred at 70° to 80° C., then more slowly till cool. This product gives a durable glossy effect on the hair without any tendency to white deposit, and the thick consistency is convenient and popular in use.

According to Peel, when the following cream is properly made, it drains nicely into the bottle, has the proper tackiness and is an excellent "all-round" hair dressing:

Mineral oil (0.860 s. g.)	**37.5 parts**
Petrolatum	**7.5 "**
Lanolin, anhydrous	**3.0 "**
Sorbitan sesquioleate	**3.0 "**
Beeswax, white	**2.0 "**
Borax	**0.5 part**
Perfume and preservative	**Sufficient**
Water	**45.0 parts**

Mix the first five ingredients and heat to 75° C. Dissolve the borax in the water and bring to the same temperature. Add the borax solution to the previous mixture slowly with moderate but thorough agitation. Perfume at 45° C. and agitate until cold. It is stated that the emulsion becomes very thick if it is agitated until cold.

Dangers and Prevention of Sunburn

In a consideration of the dermatologic dangers of sunlight, M. Waisman (*J. Florida Med. Assoc.* 39:249, 1952) points out that lighter-colored skins react to ultraviolet radiation more violently than do darker skins. They also show a greater proclivity to chronic damage and serious sequelae. Nevertheless, the brunet skin is not immune to damage, if the exposure is sufficiently potent, repeated and prolonged. Nor does pigmentation protect from injury in cases of pathologic hypersensitivity of the skin to the sun's rays. Because of the added absorption of rays reflected from sand and water, sunburn at a beach will be more severe than after the same length of exposure inland. Loosely woven clothing does not necessarily protect. White fabrics protect less satisfactorily than brown, orange or red, and all fabrics protect less when wet. It is possible to be sunburned badly on a cloudy day. Small children tolerate only about half the adult erythema dose of ultraviolet.

Less familiar than the symptoms of acute sunburn are certain complications or sequelae, such as: (1) herpes simplex usually about the mouth, (2) folliculitis, caused by hyperkeratotic blocking of the sebaceous and sweat ducts and secondary infection, (3) vitiligo, (4) chloasma, (5) showers of pigmented nevi, and (6) a persistent, increased susceptibility to sunlight.

Sunburn is easily preventable, either by natural means or by the use of chemical and physical screens. The first exposure of the unadapted and unprotected skin must be short, and the time of exposure must be increased gradually. By the judicious application of chemicals which absorb ultraviolet rays, sunburn can be prevented or minimized almost without regard to complexion or length

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U.S.I. CHEMICAL NEWS

June ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1953

Change in Cooking Agents Solves Pollution Problem

What is termed by its authors as the "complete answer" to the problem of stream pollution by pulpmill wastes was revealed at a recent technical society meeting. The new process hinges about the use of magnesium bisulfite as the cooking agent in woodpulp production instead of the present calcium bisulfite. In this way, the digester residual liquor (the crux of the present problem) can be satisfactorily evaporated and disposed of by burning. Chemicals can be recovered and used again, and heat from the combustion of the organic matter can be used for the efficient generation of steam and power.

Experiences with a commercial mill set up to study and use the process are said to have definitely established the economic soundness of the idea.

Wounds Show Affinity for S^{35} from Tagged Methionine

Results of recent research with methionine, tagged with radioactive sulfur (S^{35}), are seen as further positive proof that methionine is involved in the healing of wounded tissue. By injecting radioactive methionine into wounded rats, investigators were able to follow the course of the S^{35} through the body. Within five days of injection, they found twice as much radioactive sulfur in regenerating wound tissue as in normal unwounded skin tissue. This concentration continued to increase, with the rate of increase corresponding to the rate at which the wound healed.

Analysis showed most of the radioactive sulfur in the wound tissue to be associated with cystine. In addition, there was more cystine in the wound tissue than in normal tissue. This indicates that scar tissue produced during wound healing is different from normal tissue protein. The experiments showed that most of the sulfur in the regenerating tissue was supplied from the tagged methionine.

Al-Sb New Semiconductor

Scientists recently reported the development of a new low-cost compound of aluminum and antimony which they think may one day compete with germanium and silicon as a semiconductor for transistors, rectifiers, and other electronic devices. The compound is one of a number of combinations of aluminum, gallium, and indium with arsenic and antimony now being investigated for possible uses.

The researchers explain that aluminum-antimony has essentially the same diamond-like structure as silicon and germanium. Work to date has shown that the material can be used to convert light to electrical energy, suggesting its possible use in photo-electric cells. Rectifiers have been made in the laboratory with the material, and transistors are said to be a distinct possibility in the future.

Aroflat Alkyds Found Superior In Controlling Paint Consistency Over All Temperature Changes

Low-Temperature Studies of Viscosity Changes Show Aroflat 3025 And 3050 Unique in Keeping Alkyd Flats Brushable at All Practical Painting Temperatures; Film Properties Also Improved

The solution to an important problem encountered by both manufacturers and users of interior flat paints is seen in data recently made available on viscosity-temperature changes of alkyd-type flat paints and their resin ingredients.

The now common practice of finishing interiors at all seasons of the year, together with the rapid growth in preference for alkyd finishes, has made the relationship between temperature and viscosity in these paints an important consideration. Now, a paint's brushing characteristics and other properties during *cold and warm weather* conditions are as important to its over-all satisfactory performance as its behavior at *normal* temperatures.

Consistency Change Factor the Criterion

The most important change that occurs in alkyd flat paints as the temperature drops is an increase in viscosity. If the viscosity changes rapidly with temperature, the paint is said to have a large "consistency change factor." In a cool atmosphere, such a paint becomes thick, ropey, and difficult or impossible to brush without considerable thinning. And thinning, in turn, reduces the non-penetrating and non-ghosting properties (sheen and color uniformity) of the paint. Temporarily heating the room with space heaters can be resorted to, but practical paint technicians are quick to point out that this does not appreciably heat the wall surfaces. Since paint is applied in a thin film, it cools almost instantaneously on a cold wall, regardless of its temperature in the can. If the paint has a large consistency change factor, it will be almost as difficult to apply as in an unheated room.

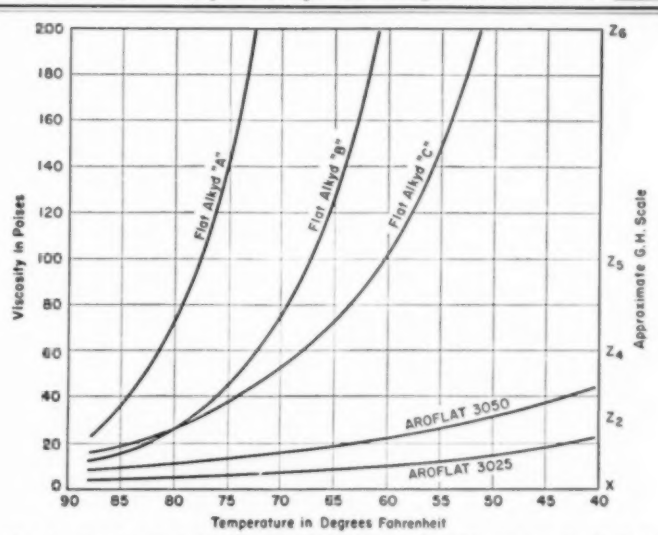
AROFLAT Alkyds Furnish the Answer

In pioneering alkyd resins for better flat and semi-gloss wall finishes, U.S.I. laboratories were aware of these viscosity problems and developed AROFLAT alkyds with unique and inherent qualities to overcome them. Data demonstrating the low consistency change factors imparted to paints by these resins was obtained recently in an independent study which paint manufacturers can verify easily in their own laboratories.

Resin Viscosities Compared

In this study, viscosity determinations were made on various resins at temperatures within and beyond the range likely to be encountered in year-around decorating. U.S.I.'s AROFLAT

MORE

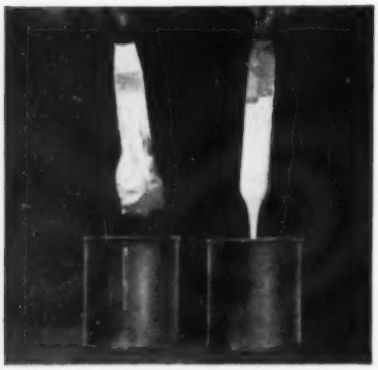


Curves showing the viscosity behavior of AROFLAT 3025 and 3050, contrasted with that of three conventional-type alkyds, as the temperature decreases from 90° to 40° F. The steep curves of the conventional flat alkyd resins mean that paint formulations containing them will be difficult or impossible to brush in cool weather, or after they have been stored in a cool place.

CONTINUED

Viscosity Studies

3025 and AROFLAT 3050 were included, as well as a number of conventional alkyd resin solutions of other companies. All of the resins were tested in the form in which they are offered to paint manufacturers.



The paint on the right is formulated with AROFLAT 3025, that on the left is a commercial flat containing a conventional alkyd. Both were held at 40° F. prior to this demonstration.

Representative curves showing how the viscosities of these resins changed with temperature are plotted below. The flat curves of the AROFLAT resins over the full temperature range offer a sharp contrast to the steep curves of three conventional alkyds, all of which are incorporated in flat paints now on the market.

Paints Show Same Effect

Further tests showed that the viscosity characteristics of these resins carried over into their respective paint formulations. For example, in a comparison of finished paints, all with consistencies of 80-81 Krebs units at 78° F., the AROFLAT formulations increased to only 86-88 units when the temperature was lowered to 63°. Over the same temperature drop, consistencies of conventional alkyd paints jumped to 140 units or more. Most authorities agree that paints with consistencies greater than 100 Krebs units are too thick to apply satisfactorily.

Film Properties Also Affected

Tests on the films of these paints at reduced temperatures, as well as at prolonged elevated temperatures, showed that they lose flexibility in a comparable manner to their sharp consistency changes. Films of AROFLAT paints applied to Morest charts remained flexible at both extremes of temperature while those of conventional paints cracked when the Morest charts were folded.

AROFLATS Yield Fool-Proof Paints

To the paint manufacturer, the results of these tests mean that with the AROFLATS he can formulate his paints to be much more "fool-proof." U.S.I. technicians point out that spring and autumn seasons bring sufficient temperature changes to produce application difficulties. While the summer ahead supplies temporary relief, now is the time to correct any fundamental faults so that stocks on dealers' shelves will not be a source of future trouble during cool weather.

New Rub Test Instrument Seen Aiding Ink Research

Rub-resistance, the property of an ink which preserves the sharp, clean appearance of printed matter throughout its useful life, is becoming more and more important, particularly in the packaging field. To fill the need for a standard test of this property, an independent research organization recently announced the development of what it describes as a new and better portable rub tester.

The characteristic motion of the instrument is planetary, i.e., a one and one-half inch square piece of paper or print is rubbed in a circle at 25 rpm over the print under test while the square piece undergoes a slow rotation of its own. Three pressures are available, and the machine can be set to turn off automatically after 1 to 50 cycles. Test conditions are entirely reproducible, directional effects of the stock are averaged, and the instrument eliminates streaks and deep gouges, it is claimed.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U. S. I.

Gluing operations in confined spaces and on small objects are said to be easier with a line of adhesives now packaged in collapsible tubes with hypodermic needle tips. Adhesives are nitrocellulose, vinyl, and rubber types. **(No. 930)**

The flat, non-divergent, knife-like ribbon of air, water, or steam emitted by a new cleaning nozzle makes it suitable for descaling, de-barking wood, cleaning buildings and equipment, and many other uses, according to the manufacturer. **(No. 931)**

A new chemical resistant lab coat, made of lightweight vinyl fabric, is claimed to be virtually immune to spotting and acid holes, to outlast ordinary lab coats many times, and to retain a neatly tailored appearance through hard wear and launderings. **(No. 932)**

For stabilizing latex emulsion paints, a new dry-form casein has been announced which dissolves easily at the point of use, provides improved viscosity, brushability, mechanical ability, and helps prevent hardening of paint pigments. **(No. 933)**

New stainless steel-vinyl plastic coatings, now available in all colors, are said to be impervious to moisture, resistant to most chemicals, quick-drying, and capable of withstanding constant dry heat up to 300° F. **(No. 934)**

Clear, clean ice flakes, freed of sediment and trapped gases, can now be made directly in the laboratory with a fully automatic machine which produces up to 300 pounds of ice daily. Ice is said to remain flaky for days if kept in an insulated bin. **(No. 935)**

A new molybdenum-base lubricant in the form of an enamel can be applied "on any type of surface including plastics, glass, and ceramics" to yield a thin, hard coating which is greasy-feeling but clean, the manufacturer states. **(No. 936)**

Spot determinations of pH to within one-half a unit over the full pH scale can be made, it is claimed, with a series of six new indicator papers with color scales printed on the containers. **(No. 937)**

A new fire blanket for labs and homes is made of plastic-coated glass cloth, weighs two and one-half pounds, is resistant to acids, alkalies, and most solvents, and stays flexible in below zero temperatures. **(No. 938)**

New plastic acoustical ceiling tile, lined with fiber glass, is said to be easy to apply by the home owner or industry, to be easily cleaned, and to be stain-, peel-, and chip-proof. **(No. 939)**

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of exposure. Physical screens bar the transmission of the sun's rays. Of these, the wearing of adequate clothing is the most successful measure. Face powders, creams and ointments are of some value. Proprietary baby oils are worthless as sunburn-preventives. Waisman advises that a satisfactory sunburn-preventive cream may be prepared by incorporating 15 per cent of para-aminobenzoic acid in Ruggles' vanishing cream or other greaseless base. A preventive lotion may be made from:

Isobutyl-para-amino-benzoate	5	per cent
Alcohol	60	" "
Glycerine	10	" "
Water	25	" "

It is suggested that the addition of two per cent of tannic acid will help to simulate suntan, and will increase the sunburn-preventive action of the lotion.

Protected Wave Lotion

According to British patent 675,870 (through *Soap, Perf. & Cosmetics* 25: 1171, 1952), granted to Henkel & Cie of Germany, it is claimed that the attack on the skin of reducing agents when used in permanent waving, particularly those containing mercaptan groups, can be avoided if compositions are used which contain soluble aluminum compounds, like aluminum sulfate. Such a hair waving solution comprises a reducing agent, an alkaline substance to give the composition a *p*H greater than 7.0 and an aluminum compound soluble in the alkaline composition. The necessary content of aluminum compounds amounts, in general, to about 70 per cent of the reducing agent (thioglycollic acid).

Japanese Cosmetic Patents

That Japanese workers are becoming increasingly interested in cosmetic developments is indicated in several patents cited in recent issues of *Chemical Abstracts*. For example, T. Wada, in Japanese patent 229, describes the following process for preparing toilet cream and emulsion from cetyl alcohol at low temperature: 25 parts of cetyl alcohol and five parts of stearin are melted, then a mixture of 25 parts of ethyl alcohol, 2.5 parts of benzoic acid, 7.5 parts of triethanolamine, and 8.5 parts of perfume are added, the product finally being emulsified by adding water.

In Japanese patent 600, I. Urata specifies that a hair-waving solution may be composed of five to 10 per cent of ammonium or sodium glycolate, perfume and sufficient alkali to bring the pH to between eight and 10.

The production of a shampoo is described by K. Sagawa in Japanese patent 2671. He suggests that the following mixture be dried to yield a powdered or molded product:

Sodium alginate (10 per cent paste)	10 parts
Soap, powdered	27 "
Sodium carbonate	9 "
Bentonite	40 "
Acid clay	24 "

A lip covering fluid may be prepared, according to M. Nakamura in Japanese patent 370[illegible], from:

Ethyl alcohol	93.0 parts
Ethyl cellulose	3.5 "
Mono- or diglyceride of oleic acid	3.5 "

Antioxidant from Osage Orange Fruit

J. R. Clopton (*J. Am. Oil Chem. Soc.* 30:156, 1953) has observed that the dried fruit of the Osage orange contains approximately 10 per cent by weight of a material that is remarkably effective in delaying the onset of oxidative rancidity in lard and other oleaginous substances which are subject to oxidative deterioration.

Osage orange fruit contains several different pigments. The principal ones are osajin and pomiferin, both of which are classified chemically as isoflavones. The antioxidant in its most potent form appears to be a mixture of pomiferin, with a small amount of osajin, and one or more amorphous resinous substances which act synergistically with the pomiferin. Osage orange antioxidant has several attractive economic advantages as well as a high order of potency. There is a plentiful supply, renewable each year. The dried fruit contains an amazingly high concentration (approximately 10 per cent by weight) of the active principals. The antioxidant is readily extracted from the fruit and refined by simple solvent fractionation procedures.

The Osage orange antioxidant responds well to the synergistic action of certain acids. Of these acids, tartaric, oxalic, malonic, citric, and ascorbic acids gave the best responses. Ascorbic acid gave a slightly better result than citric acid, but the slight advantage would not justify its use because it is much more costly than citric acid.

It is reasonable to suppose, says Clopton, that the Osage orange antioxidant will prove useful in such materials as oil-soluble vitamin concentrates, cosmetics, pharmaceuticals, lubricating greases, and many other substances that are subject to oxidative deterioration. In concentrations required for antioxidant function the Osage orange antioxidant imparts no noticeable flavor or odor and is nontoxic. Large doses of the antioxidant have been fed to rats over a period of several weeks without any apparent ill effects on growth or metabolism of body tissues. Pomiferin is an isoflavone and represents a group of well known plant constituents, many of which are known to occur in plants used for foods.

Deodorant Action of Chlorophyll

In investigations on the deodorant properties of chlorophyll, D. M. Bryce and R. M. Savage (*Pharm. J.* 170:209, 1953) used a solution of 15 mg. of not less than 95 per cent sodium chlorophyl, in water, which was sprayed on to two cotton pads, each weighing 17 Gm. One of these pads was soaked with 20 cc. of decomposing bovine blood, and the other with 40 cc. of the same blood. Two pads to which no chlorophyll had been added were treated in the same way, to act as controls. The pads were then placed in boxes in which was a small hole, and 139 people were asked which box of each pair smelled less. The results were as follows:

Odor	20 cc. solution	40 cc. solution	Total
Less with chlorophyll...	51	59	110
No difference.....	8	2	10
Worse with chlorophyll..	10	9	19

Distributing the 10 undecided results equally between the classes and applying standard tests of significance, the investigators conclude that this result would have happened by chance less than once in 2000 million such trials, and is therefore highly significant.

Light-Stabilized Cosmetics

British patent 685,830, granted to Colgate-Palmolive-Peet Co., relates to cosmetic compositions, such as brilliantine, toilet water and perfume, which contain an ingredient which is normally unstable in sunlight, like a dye or perfume which has a tendency to fade quickly or otherwise deteriorate after exposure to sunlight. The patent specifications suggest the incorporation of about 0.05 to one per cent by weight of monobenzoyl resorcinol which, when added to a dye-containing brilliantine, stabilizes the color against deterioration when exposed to sunlight.

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Patent Thoughts and Trends

by Thomas Cifelli, Jr.*
PATENT ATTORNEY

NEW USES OF OLD COMPOUNDS

It is doubtful whether there is any field of patents which is more misunderstood than that involving new uses for old compounds or compositions. When one considers that a large part of the research effort of many workers is devoted to finding uses or applications for known compounds or compositions, the practical importance of a clear understanding of the chances of patenting the resulting findings becomes clear.

First, it should be understood at the outset that one can not re-patent an old compound or composition as such. It is necessary to specify some other ingredient, either expressly or by implication. The added ingredient is recited by implication when the claims set forth a composition which in terms inherently requires other components.

A third way of succeeding in patenting a new use for an old compound is by claiming a process involving the new use. For example, if a known compound is found to possess insecticidal properties, the claims can be couched in terms of a method for killing insects.

There are many difficult questions which this type of situation poses for the patent attorneys. These questions go mainly toward obtaining broadest protection and enforceability. However, such matters will not be dealt with here, as the present thought is to attempt to dispel the notion in the minds of many readers that once a compound is old no patent protection involving the use of that compound can be obtained. Such a notion, it is believed, has resulted in a number of useful inventions going unprotected.

Some recent patents of more than passing interest were issued. They involve a process for the preparation of alpha and beta - 6 - methyl - ionones (U.S. 2,636,052), an antigen for determining the presence of syphilis (U.S. 2,638,435), crystalline beta-ionone (U.S. 2,638,483), and 2,2′-ethylidenebis 3,5,6-trichlorophenol (U.S. 2,638,486).

Alpha and Beta Irones

Heinrich Grutter, a Swiss inventor, received a patent on a process for the preparation of alpha and beta-6-methyl-ionones, which patent was assigned to the Swiss Company, Firmenich & Co.

The reaction sequence is below.

Formula IV and V are respectively the alpha and beta-6-methyl-ionones.

According to the patent it was unexpected that a substance like the ketone of Formula III would cyclize according to the above scheme. As evidence of this, it was stated that contrary to all known examples (cyclization of pseudo-ionone, etc.), the 1′ carbon atom which takes part directly in the cyclization of the process is not adjacent to a double bond.

An example taken from the patent shows the use of phosphoric acid as a cyclization agent:

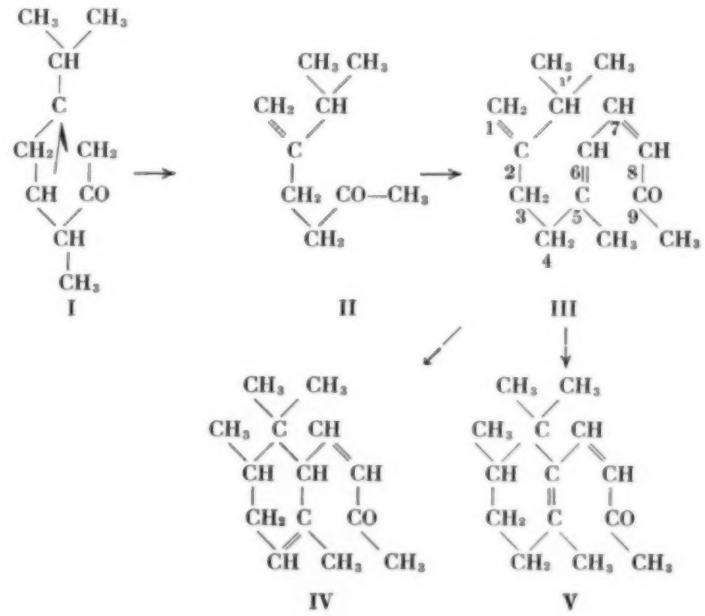
Into 55 g. of −83 per cent phosphoric acid ($d = 1.65$) cooled to between −4° and 0° C., 14 g. of 5-methyl-2-isopropyl-1,5,7-decatrienone-9 (boiling between 100° and 110° C. under 0.2 mm. Hg) are introduced at such a rate that the temperature does not exceed 0° C. The solution is maintained subsequently at 0° C. for 20 minutes, then heated to between 50° and 55° C. and maintained 15 more minutes at this temperature. It is mechanically agitated during the whole period of the operation. It is then poured on ice, extracted with ether, washed with water and with sodium carbonate, dried, concentrated and distilled.

One obtains 1.4 g. of foreruns and 9.5 g. of irone boiling between 87° and 89° C. under 0.2 mm. Hg. After purifying by means of Girard's reagent P, the constants of the irone obtained are:

$d_4^{20} = 0.9407 - 0.9360$ $n_D^{20} = 1.5004$

Prior to purification, the irone has often a lower density (d_4^{20} minimum = 0.930).

This product is a mixture of various stereo-isomers of the α-irone type and



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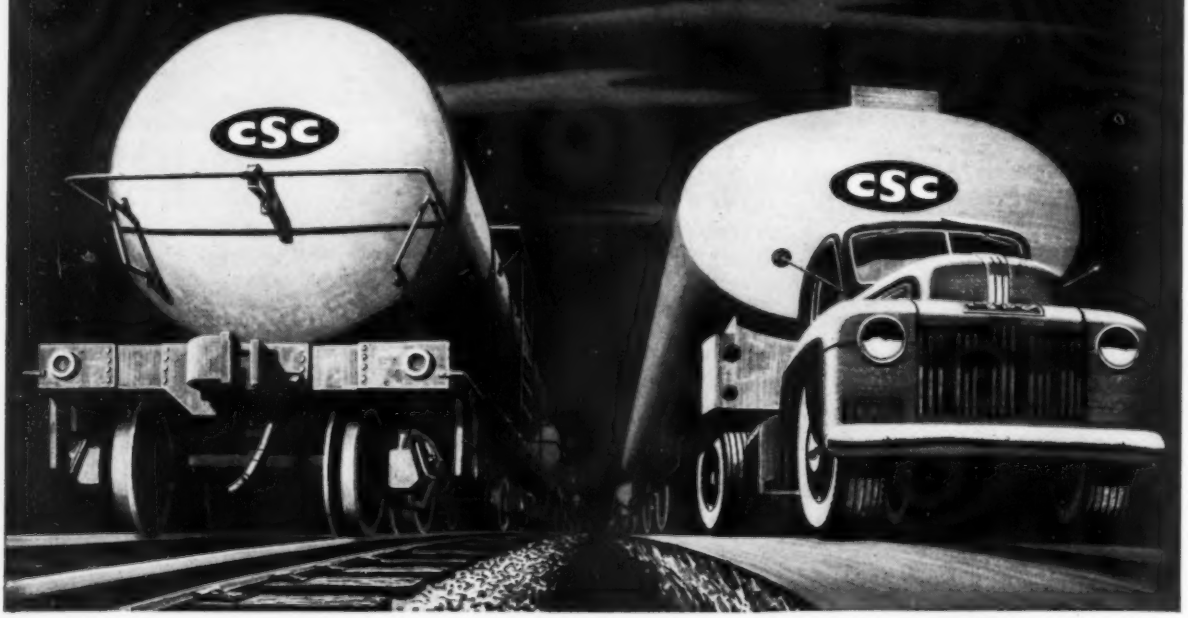

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of a few of the β-irone. The phenyl semicarbazone melts at 172° C., its 2,4-dinitrophenyl hydrazone at 120° C. These two derivatives are identical with those yielded by the α-irone. In the mother liquors, stereoisomers may be found.

New Syphilis Test

Fugazzoto, an Indiana inventor, obtained U.S. Patent 2,638,435 on an invention relating to an indicator for the determination of the presence of syphilis.

Fugazzoto claims that his indicator or antigen, which is made from a raw material of vegetable origin, is more reliable than the known antigens.

The preparation of the antigen, its use, the test and comparative data, together with a discussion of results, all taken from the patent, follow:

Preliminary preparation of raw material

Where active baker's yeast is obtained in the dehydrated state, it is ground into a rather fine powder through the use of sterile clean dry sand or any other convenient means. Where active baker's yeast, obtained in the moist state either on the open market or from a laboratory culture medium, is used, it should first be dehydrated as follows:

It is spread out in a thin layer on porcelain dishes or glass plates and placed in a dry-air incubator held at from 37° to 40° C., the incubator being provided with a suitable air circulating system. The substance is stirred periodically and its consistency noted from time to time. This consistency is at first putty-like in appearance, later rubber-like, and finally rather hard and brittle. For greatest facility in handling, it must not be allowed to dry beyond the stage where it is still pliable under the spatula. Baker's yeast will generally lose approximately 70 per cent of its weight during this process.

In the event brewer's yeast is used, it is first desirable to wash out the impurities of the brewing process thereby assuring a purer antigen. The washing is done as follows: the yeast powder is weighed and transferred to bottles of suitable size containing 2.0 ml. of distilled water for each gram of powder. The mixture is stirred thoroughly for about ten minutes, preferably with a mechanical mixer, and the wash water is then removed either by filtration in a Buchner filter under reduced pressure, or better still by centrifugation. The washing is repeated two or more times in the same manner, except that five minutes of thorough stirring is desirable before removal of the wash water. After the material is washed sufficiently, it is subjected to the same drying process as described above in connection with active baker's yeast obtained in the moist state.

Preparation of antigen extract

The extraction of the yeast powder is accomplished as follows:

An amount of powder is weighed and then transferred to a mortar or a Waring Blendor to which is added just enough 95 per cent ethyl alcohol to make a rather thick fluid paste. The mixture is ground for 15 minutes if it has been placed in a mortar or for five minutes if a Waring Blendor is used. During the grinding operation small portions of alcohol are added to maintain the thick fluid consistency of the material. The mixture is then transferred to a Pyrex bottle of suitable size, which is stoppered with a glass cork or tin-foil-covered cork; a volume of 95 per cent alcohol equivalent to 4.0 ml. for each gram (original dry weight of powder) is then added. Some of this alcohol should be used to aid in transferring the material to the Pyrex bottles. The extracting mixture is placed in the dark at room temperature and agitated thoroughly several times a day for two days. After it has stood overnight undisturbed the supernatant liquid is decanted into suitable centrifuge tubes (or a filter) to be cleared. The clear extract is stored in appropriate Pyrex bottles and the residue, if any appreciable amount was carried over from the extracting bottle, is returned thereto. To all of this residue is added 2.0 ml. of 95 per cent ethyl alcohol per gram (original dry weight) of yeast employed, and a second extraction is made as above. The supernatant liquid is decanted as in the first extraction and then a third extraction is made as in the second extraction.

Finally, the extracted residue is washed three times with a volume of 95 per cent alcohol equivalent to 1.0 ml. for each gram (original dry weight) of yeast employed, sedimenting the residue each time in the centrifuge at about 2000 R. P. M. to obtain the clear supernatant. All washings and extractions are pooled in a Pyrex bottle and agitated several times daily for three or four days. Approximately one-third of the extract is set aside while cholesterol (Phanstiehl ash-free) is added to the major portion in an amount equivalent to 0.5 gram per 100.0 ml. of extract The bottle of extract may be heated in a water bath at 56° C. to hasten solution of the cholesterol, and the final product is then filtered (gravity filter) before standardization.

Use of the antigen

In order to use this cholesterolized extract of yeast in the serology of syphilis, it is necessary first of all to prepare a suitable suspension of the dissolved lipoids. This is accomplished by admixture with physiologic salt solution (amount determined by titration). The customary method of making this mixture is (as described by Kolmer for beef heart antigens) by adding the extract drop by drop to the required amount of saline. However, it has been found that more sensitive suspensions are obtained if the extract is first mixed with a small amount of saline (as determined by experimentation) and allowed to stand from seven to ten minutes before the mixture is brought up to proper dilution with further addition of saline.

The test

To tubes containing 0.02 ml. of inactivated patient's serum (or 0.1 to 0.2 ml. of spinal fluid) is added 0.1 ml. of the antigen suspension mentioned above. The tubes are thoroughly shaken and allowed to stand at room temperature for from ten to twenty minutes before the required amount of guinea pig complement is added (usually two units in diagnostic tests). The tubes are again agitated, placed in a refrigerator at from four degrees to eight degrees C. for from four and one-half to five hours, and then at room temperature for fifteen minutes. Sensitized red blood cells (sheep) are added—0.2 ml. of 2½ per cent suspension—the tubes agitated and then placed in a water bath at 37° C. for fifteen minutes. The final results are read and recorded in the customary manner.

Comparative test

A properly standardized antigen is one which possesses a high capacity for detection of the presence of syphilis. However, it is likewise desirable that the antigen avoid false reactions in conditions other than syphilis. All antigens developed to date by the various authors have been known to give certain percentages of false reactions. This includes even the highly purified cardiolipin antigens.

(*Continued on Page 856*)

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The perfect synthesis of the exquisite Lily of the Valley perfume.

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A perfumed bath is one of the oldest luxuries of mankind, and between the public baths of Rome and the colorfully-tiled private bathrooms of today, many a long century has elapsed.

As unchanged as water itself, however, is the human desire for a fragrant toilette, and to this end D&O has recently developed a number of fine new perfume bases specifically for soaps. Trial quantities and suggested proportions will be forwarded on request, however, individual experiment is recommended for best results.

Bouquet 40-R-6010—A new fresh type which has proved its value in direct consumer test competition with many perfumes. Particularly valuable in soap bases such as castile types which present a problem in covering base notes. **$6.35** per pound.

Verdura 14—Excellent body for compositions for which geranium is used in reduced proportions, or omitted.
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Perfumer's Shelf

Evaluation of Irones

In reporting on the evaluation of irones in mixtures and in absolute iris oils, Y.-R. Naves (*Chemia* 6:277, 1952 through *Perf. & Essent. Oil Rec.* 44:67, 1953) describes some of his recent work on irones. He observes that several ketones of formula $C_{14}H_{22}O$, as well as others, have been found in the distillates and extracts of iris, together with aldehydes. The relative proportions of the different irones of course depend on several factors, and their separation either from the absolute essence or when mixed with resinoids is difficult and not altogether satisfactory. Fractional distillation permits a concentration of 90-95 per cent, but the use of reagents is sometimes of doubtful value. According to Naves, there are three methods for analyzing irone mixtures: (1) the neo-β-irone content is determined either by refractometry or from the ultra-violet spectrum; (2) the γ-irones are found from ozonolysis according to Doeuvre; (3) the ratio of α/*iso* α may be known from conversion of these ketones into semi-carbazones of the dihydro-α-irones.

It is generally concluded that the mixed irones in absolute oil of iris, as well as those obtained by cyclizing the pseudo-irones, are very complex. Much of this complexity is attributed to many of the contradictions encountered in the literature. Today, however, it is readily possible to determine the approximate amount of neo-β-irone present by measuring refraction or u-v absorption. The γ-irones can be determined by Doeuvre's ozonization as modified and adapted by Naves, *i.e.*, by direct measurement without use of an arbitrary correction coefficient. This may be applied to a whole series of test-samples in a very economical manner. As for the *alpha*-irone mixtures, their *iso* content can be known by hydrogenation into the dihydro-irones. These *alpha* forms are isomers of least interest to the perfumer.

It is not possible to distinguish the irones present in the absolute essences by their optical rotation, since they are partially and non-uniformly racemized. This means that, the same *alpha* isomers being present both in the absolute essences and in the synthetic preparations, not even an expert can show or suggest the addition of synthetic irone materials to the absolute product, since such addition does not cause excess of *iso*-α-irone.

Separation of Menthol from Mint Oils

The separation of menthol from mint oils by fractional distillation and by chromatographic adsorption has been described by H. M. Chang (*Iowa State Coll. J. Sci.* 26:181, 1952). In his procedure menthone and lower boiling fractions of mint oil were removed by precise distillation. Crude menthol was separated from the resins in the residue by steam distillation. After this, digestion with water produced U.S.P. menthol in 85 per cent yield, as compared to 40 to 50 per cent yield by freezing out.

According to Chang, almost 100 per cent of both menthone and menthol can be recovered by chromatographic separation. Mint oil was adsorbed on 100 to 200-mesh activated carbon and washed successively with: (a) 80 parts Skellysolve D to 20 parts of carbon tetrachloride; (b) carbon tetrachloride, and (c) carbon tetrachloride plus 10 per cent menthol.

Determining Essential Oils in Ethanolic Solution

It has been pointed out by H. Kaiser and W. Lang (*Ost. Apothekerztg.* 6:536, 1952) that small quantities of essential oils in ethanolic solution cannot be determined by distillation processes, since the oil forms a ternary azeotropic mixture with the ethanol and water. Shaking out with pentane is also unsatisfactory, on account of the solubility relations, but by the addition of ammonium sulfate this process can be operated with good results. About 20 Gm. of a preparation is diluted with water to 100 cc. and distilled. The first 50 cc. of the distillate is collected in a separating funnel, treated with 100 cc. of saturated ammonium sulfate solution, and shaken out three times with 25 cc. quantities of pentane, the pentane being poured off carefully from the top of the separator. The combined pentane extracts are allowed to stand for a few hours and transferred to a tared flask, taking care that no trace of the aqueous solution is transferred with it. After the removal of the pentane at 40° C. the residue is weighed. In the case of solutions of essential oils in spirit, the distillation may be omitted. The method may be applied to tinctures such as those of cinnamon and valerian, and to cosmetic preparations.

Indian Vetiver Oil

In a consideration of the Indian vetiver (khas) oil industry, D. R. Dhingra, G. N. Gupta and G. Chandra (*Indian Soap J.* 18:77, 1952) discuss in detail the production methods, the physical and chemical characteristics, and the composition of oils from various parts of India. The suggested specifications for the oil are as follows:

Specific gravity	**0.9848-1.048**
Index of refraction	**1.5110-1,5190**
Acid value	**5-40**
Ester value	**14-40**
Acetyl value	**123-198**
Total vetriverol content	**70-80 per cent**

Oil of Hymentharum Tenhifolium

According to U. G. Nayak, S. Dev and P. C. Guha (*J. Indian Chem. Soc.* 29:23, 1952), the plant *Hymenatherum tenhifolium*, Cass, a native of Mexico, has been introduced to, and is now widely distributed in, Bangalore. In their investigations, batches of this plant, which has a highly aromatic odor, were steam distilled at different periods of the year. The yield varied according to the time of the year; ranging from 0.7 per cent in June to 0.2 per cent in November. The yellowish oil thus obtained showed the following properties:

Specific gravity	**0.8130**
Refractive index	**1.4712**
Optical rotation	**-5° 1'6**
Saponification value	**20.97**
Saponification value, after acetylation	**83.9**
Acid value	**0.2**

Nayak, Dev and Guha found that

TOP NOTES by Fritzsche

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A THOUGH

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FLOWER of the Month

May—Lily of the Valley or Hawthorn

June—Rose or Honeysuckle

MAYBE YOU KNOW HIM . . .

CARL EDWARDS—chemist by training, salesman by choice—joined our Chicago sales staff in April 1933 and he's been a pillar of strength in that division ever since. From Chicago's Loop to the far ends of Minnesota, Wisconsin and parts of Indiana, wherever there are users of flavors, aromatics or essential oils, Carl is well known. Often sought is his wise counsel on the best use of these materials based upon his specialized experience of more than twenty years. His absorption in each customer's problem is as complete as though it were his very own. Hobbies? . . . Well, he likes the breathless thrill of hunting game birds and water fowl but this sport is considered too strenuous for some and as a result shooting partners are a bit scarce. Likes fishing, too, but his claims of piscatorial prowess are modest in the extreme. One hope he now harbors—a long smouldering ambition to master the game of golf—seems faintly possible of achievement with his fine, new set of matched clubs. There's one contingency: Carl's good wife and son, Bill, may have more practical ideas for the use of his spare time!

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The unrivalled fragrance of fresh-cut roses has been skillfully reproduced in this delightful version of French Rose de Mai. We'd like you to examine this specialty with two considerations in mind: First, the very lifelike character of its fragrance; second, the possibility of using it to economical advantage as an extender in formulations containing the much costlier Absolute of Rose. CENTIFOLIOL at $150. per pound ($10.00 for a trial ounce) is a product every perfumer should know about. Try it now and you'll buy it later.

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A THOUGHT for the Month:

"We must always remember that a man's reputation is made not because of a few outstanding events in his life, but because of little things. It is from totaling the small details in a man's professional or business life that we form our picture of his true character."

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Good Scents

FOR PERFUMERS

• LOTIONS •

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INDOORS or out, spring, summer, fall or winter, lotions are a "must"—for women especially, but increasingly for men. . . . Profitwise, a good, year-round market, but perfumewise, one that calls for extra care. The fact that lotions are "worn" on the skin for protective, softening or soothing purposes requires that they be applied more freely than other toiletries. This imposes certain restrictions upon the product's aromatic content. For one thing, the fragrance cannot be too pronounced, yet it must be sufficiently so to overcome the off-note of any other ingredient in the lotion's formulation. It must also be completely non-irritating, even to the most sensitive skins. Thus, the creation of such fragrances requires not only extraordinary perfuming skill, but an exact knowledge of aromatic raw materials and their physiological effect, singly or in combination, upon the skin. These conditions place a large burden of responsibility upon the lotion manufacturer,—one that suggests the wisdom of obtaining his perfume compositions from *only the most reliable and exacting sources of supply.*

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BOUQUET G-066 ..... **$ 9.00 lb.**
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MEADOW BREEZE L-487 ..... **$10.50 lb.**
This is a gay, fresh outdoor fragrance.

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Another outdoor fragrance with a sporty, masculine tone.

APPLE BLOSSOM K-403 ..... **$ 7.00 lb.**
A true-to-type rendition of one of Nature's most delicately scented spring blossoms.

BOUQUET V-240 ..... **$ 6.00 lb.**
A light, refreshing, economy-priced bouquet.

FLORAL BOUQUET V-123 ..... **$20.00 lb.**
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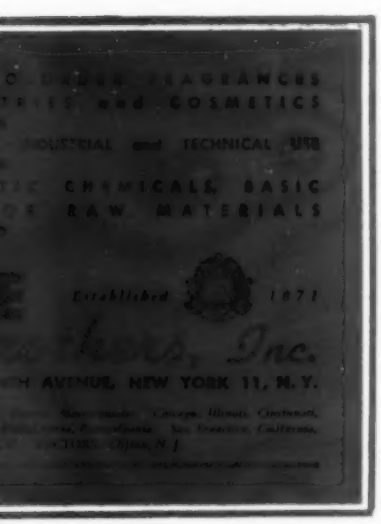

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• MEMO •

To: PHARMACEUTICAL AND PROPRIETARY MANUFACTURERS

From: FRITZSCHE BROTHERS, Inc.

Subject: CHOOSING THE RIGHT PHARMACEUTICAL FLAVOR

Today, before marketing any new product, most drug houses give serious consideration to its palatability.....and thus, to its flavor. It has been our privilege, as flavor specialists for more than 80 years, to work closely with many of these firms and in every case their final choice of flavor has involved all or most of the following considerations:

COMPATIBILITY - There must be harmony between the pharmaceutical ingredients and the flavor chosen to disguise the taste.

PALATABILITY - Since this is the end result desired, the more complete its achievement, the greater will be the product's acceptance by those with sensitive or finicky tastes.

SUITABILITY - This is where the expert's fine sense of discrimination plays an important part in providing the appropriate flavor for the particular product.

STABILITY - Avoidance of materials susceptible to change requires intimate, technical knowledge of all ingredients used in flavoring.

UNIFORMITY - Producers of reputable products cannot afford to employ flavorings that fail to maintain a high measure of uniformity.

QUALITY - This should be the basic characteristic of every pharmaceutical component - including flavor.

PRICE - So little flavor is needed to provide the palatability desired that price should be a consideration only to the extent that it produces the best available flavor for the purpose.

Please remember, when faced with any problem involving flavor, that our laboratory facilities and experience are available for the asking. Remember, too, that in handling such problems, our firm policy is one of strictest confidence.

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under atmospheric pressure the oil distilled between 160 and 280° C.; 75 per cent at 160-180°, and nearly 60 per cent at 160-170°. As it polymerized under ordinary pressure it was fractionated under reduced pressure, and ten fractions collected, five of which were below 190° forming nearly 75 percent, and including a hydrocarbon fraction that consisted mainly of the new acrylic monoterpene, to which the name hymentherene has been given.

New Oil of Mentha

According to T. Sacco (*Riv. ital. essenze, profumi, pianti offic., olii vegetali, saponi* 34:337, 1952), a new variety of mentha gave an oil with the following properties:

Specific gravity	0.9435
Specific rotation	−42.8°
Index of refraction	1.4895
Acetyl value	1.87
Ester number	20.57
Ester number, after acetylation	74.67
Ester number, after hydrogenation and acetylation	237.07
Total menthol	21.44 per cent
Free menthol	15.72 " "
Ketones (as Carvone)	52.60 " "
Solubility in 80 per cent alcohol	1:1

Problems of Odor Research

The problems of odor research from the viewpoint of the physicist have been discussed by J. Greenspan during the Conference on Basic Odor Research Correlation held at the New York Academy of Sciences on April 23 and 24, 1953. He pointed out that several theories have already been offered to "explain" the mechanism of odor detection and many other theories will undoubtedly be forthcoming. In order to evaluate such theories, it will be necessary to set up objective criteria which are capable of accurate experimental measurement. There are many techniques available for such purposes in the fields of physics, chemistry and engineering and their applicability should be examined from the viewpoint of the special requirements of odor research.

Since odor detection is a very sensitive function of the human, the methods employed must be at least as sensitive and yet be capable of accurate measurement. Thus, to standardize such methods, one should be able to prepare samples of air-containing odoriferous substances at extremely low concentrations. These samples must be reproducible and uniformly distributed and of accurately known concentration. During the past few years many instruments for "trace analysis" have been developed. Some of these instruments should be directly applicable to odor research, while others may require modification. Among them are such instruments as the mass spectrometer, the optical infra-red, visible, ultra violet spectrometers, the radioactivity tracers detectors, flame photometer, absorption methods (paper chromatography, liquid absorbers), and others. Greenspan also observes that the quantitative study of the reaction of receptor nerves to odor stimulus is of primary importance in testing theories of odor. Here, many sensitive instruments and techniques may be borrowed from the field of neurophysiology.

Odorant

In a paper presented during the odor conference at The New York Academy of Sciences on April 24, 1953, R. W. Nioncrieff observed that inasmuch as smell is a primitive sense, one that emerged long before vision, its main functions are to serve primitive needs, notably those of nutrition and reproduction. Two other functions that the sense of smell exercises are to warn and to please.

Odorant materials come from many sources, some from the animal kingdom and others in variety from the roots, stems, leaves and flowers of plants. Until the advent of the chemist, the number of odorant materials, and correspondingly the number of different odors, was limited. The early chemists were capable of producing, some olfactory surprises, but modern synthesists have made a bewildering variety of odorants. Man's olfactory apparatus has proved to be surprisingly capable of dealing with this influx of new material, but understandably it sometimes finds itself in difficulties. For example, why do some compounds, which are so similar chemically, smell so different? Why do others, so diverse to the chemist, smell so similar? These and similar questions have constituted an intellectual problem, which has been attacked by philosophers and particularly by scientists.

A fruitful approach to the problem has been to study the physical and chemical properties of odorants. To be odorous at all, a material must satisfy two criteria: (1) it must be volatile, (2) it must be soluble in the tissues of the nasal apparatus. But there are many substances that fulfill these two conditions, but which lack smell; water and glycerine are typical of them. What other condition or conditions must be met? Is it some feature of chemical constitution? Many relations have been found between odor and constitution but anomalies and exceptions have also been found. Perhaps, says Moncrieff, the shape of the molecule determines whether the substance will be odorous.

Oil of Thymus Serphyllum

Ininvestigations on *Thymus Serpyllum*, T. Shemano and S. Nomura (*J. Pharm. Soc. Japan* 72:1648, 1952 through *Chem. Abstr.* 47:2941 1953) found that the main constituent of its oil is about 35 per cent of thymol. Other components include phenylurethan, linalool, para-cymine, *alpha*-pinene, and a trace of *d*-borneal.

Carveol and Carveol Acetate

It is reported by R. H. Reitsema (*J. Am. Chem. Soc.* 75:1996, 1953) that two important constituents of spearmint oil, carveol and carveol acetate have been prepared by a convenient method. The reduction of carvone to carveol using aluminum isopropoxide has been reported several times. It seemed of interest to investigate this reduction using lithium aluminum hydride as the reducing agent to compare yields and the nature of the isomers obtained.

The yield of crude carveol, specific rotation -36.2°, obtained was 92.8 per cent of the theoretical amount. Reduction with aluminum isopropoxide has been reported to give carveol mixtures with rotations of 100.9–108.2° and −109.0° from *d*-carvone and *l*-carvone, respectively. This would indicate that nearly equal amounts of the *cis* and *trans* isomers formed since *d*-carvone leads to *d-cis*-carveol, specific rotation 23.9°, and *d-trans*-carveol, specific rotation 213.1°. Lithium aluminum hydride gives predominantly the *cis* configuration as can be seen from the rotation of the crude mixture which is specific rotation −36.2°. This would be the most favored configuration assuming that attack takes place at the less hindered side of the carbonyl group. The mixture was investigated by isolation of *l-cis*-carveol 3,5-dinitrobenzoate and by separation of the *p*-nitrobenzoate into the *cis* and *trans* isomers.

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Industry's Books

The Nature and Significance of the Antibody Response, Edited by A. M. Pappenheimer, Jr., Symposium Held at the New York Academy of Medicine, March 21 and 22, 1951, 227 pp., Columbia University Press, New York, (1953), Cloth $5.

This outstanding group of papers represents an important contribution to current ideas on the formation of antibodies, their nature, and their role in allergic diseases such as hay fever and asthma. Each is written by a recognized authority in his special field and presents, with ample documentation, the results of long and careful research. Emphasis throughout is placed on the underlying biological significance of immune reactions. For the first time the use of radio isotopes in exploring the mechanism of the reactions has been comprehensively reviewed.

A Manual of Clinical Allergy, by John M. Sheldon, M.D., Robert G. Lovell, M.D., and Kenneth P. Mathews, M.D., University of Michigan Medical School, 413 pp., Illus., W. B. Saunders Co., Phila., (1953), Cloth $8.50.

In this work an effort has been made to present the subject in a manner found practical at the allergy clinics of the University of Michigan Hospital and the University of Michigan Health Service. This work is an outgrowth of the training program provided for medical students and the post-graduate courses in allergy at the University Hospital. Emphasis has been placed on certain aspects of allergy practice which often are not very thoroughly covered in the standard texts. This is exemplified by the sections on pollen and mold identification, the preparation of testing and treatment extracts, pulmonary function tests, allergy to plastics, and equipment for the allergist's office. In recent years, endocrine factors in allergic disease, drug allergy, collagen diseases, and vascular allergy have been recognized as being more important than was appreciated in the past, so relatively more space has been devoted to these matters than has been customary in standard texts. By placing emphasis on the practical features of doing a sound allergy work-up and treating patients in a safe and medically acceptable fashion, this manual attempts to show how a physician can conduct the management of allergic patients in a way which will be of service not only to patients but also to medical colleagues in the community.

Starch, Its Sources, Production and Uses, by Charles Andrew Brautlecht, Professor Emeritus, Chemistry and Chemical Engineering, University of Maine, 408 pp., Illus., Book Div., Reinhold Publishing Corp., New York, (1953), Cloth, $10.

Organized to present a general survey of the entire starch industry, this new book assembles into a single volume all the basic information of the sources, technology and uses of starch. Major emphasis has been placed on white potato starch—its characteristics, specifications, methods of analysis, uses, and the economics of various plant materials. Full information, however, is also included on such other starch sources as sweet potatoes, corn, tapioca, wheat and rice. Latest processes and equipment used in all types of starch production are described in unusually complete detail. Documented by selected references and by illustrations of materials, processes and equipment, Brautlecht's book will prove an important contribution to starch literature and indispensable to all those concerned with the manufacture, chemistry and numerous industrial uses of starch, particularly in the paper, textile, adhesives and food industries.

Textile Fibers, Yarns, and Fabrics (A Comparative Survey of Their Behavior with Special Reference to Wool), by Ernest R. Kaswell, Associate Director Fabric Research Laboratories, Inc., Boston, 552 pp., Reinhold Publishing Corp., Book Div., (1953), Cloth $11.

The purpose of this book is to evaluate the engineering, physical and chemical behavior of natural and synthetic textile fibers, yarns and fabrics. Its purpose is to offer a carefully annotated, interpretative bibliography of textile behavior with special reference to wool. The first section of the book deals with the intrinsic properties of fibers. Here, such characteristics as stress and strain, energy absorption, elastic modulus, repeated stress, chemical, thermal, biological and environmental resistance are fully discussed. In the second section, the relationships of these fiber properties to such fundamental fabric requirements as abrasion resistance, crease, retention, wrinkle resistance, "hand," thermal conductivity and air-water permeability are explained in unusual detail. Using wool as a yardstick for comparing fiber and fabric properties, Kaswell's book brings you a complete study of all fibers including such recent synthetics as Dacron, Vicara, X-51, etc.

Textbook of Botany, Revised Edition by E. N. Transeau, Emeritus Professor of Botany and Plant Pathology, Ohio State University, H. C. Sampson, Professor of Botany and Plant Pathology, Ohio State University, and L. H. Tiffany, William Deering, Professor of Botany, Northwestern University, 817 pp., Illus., (1953), Harper & Brothers Publishers, New York, $6.00.

Since its original publication a dozen years ago this work has been unrivaled as a truly modern presentation of the subject matter of general botany. It follows an ecological and physiological approach rather than the traditional morphological one, and a genetic approach in the consideration of such topics as heredity, evolution, and the great groups of plants. The authors have now prepared a careful and thorough revision of this distinguished text. Holding to the purpose, scope, and general organization which have proved so successful, they have completely rewritten a number of the topics, including two entire chapters and large parts of many others, brought all material and references up to date, completely remade the index, provided forty entirely new illustrations, and reworked a number of others. The 425 beautifully executed and well-reproduced illustrations are a notable feature of the text. The entire text is well and carefully written, intelligible and illuminating.

Polyethylene Packaging Problems

(*Continued from page 767*)

A second factor tied very closely to the above question on concentration is the effect of the medium. We present tables on tests run with the following vehicles—mineral oil, alcohol (95 per cent), dilute alcohol (70 per cent), water plus dispersing agent ("Tween 60"). (See Table III, below).

A series of tests on a commercial after-shaving lotion and toilet water as actually prepared was compared to the same concentrations of perfume oil in 95 per cent alcohol. (See Table IV, Page 846.)

In comparing these alcoholic and hydro-alcoholic solutions held in polyethylene for four months on the basis of odor, it was easy to choose the alcoholic ones as better. We found the top note affected in both cases, although to a lesser degree in the straight alcohol. On test paper the one with alcohol and water was easily picked from the control held in glass, for strength and character; the one with straight alcohol could be picked from its control mainly by loss of top note.

(See Table V, Page 846.)

We feel we have here a decided indication that the nature of the cosmetic vehicle plays a strong role in determining the extent of permeation. Mineral oil and water produce much larger loss values than does alcohol; further, dilute alcohol (70 per cent) permits more permeation than 95 per cent alcohol. These odd results may be connected with a "clocking effect" by the vehicle or may concern partition of the permeating

(*Continued on page 846*)

TABLE II

Solution Strength Per Cent W/V	Gms. per Bottle*	Methyl Benzoate in 95 Per Cent Alc. Loss Gms.**	Loss Per Cent	Acetophenone in 95 Per Cent Alc. Loss Gms.	Loss Per Cent	Methyl Benzoate in Mineral Oil Loss Gms.	Loss Per Cent	Acetophenone in Mineral Oil Loss Gms.	Loss Per Cent
2 per cent	1	.13	13 per cent	.06	6 per cent	.46	46 per cent	.45	45 per cent
4 per cent	2	.17	8 per cent	.11	5 per cent	.47	23 per cent	.44	22 per cent
8 per cent	4	.31	7.5 per cent	.19	4.5 per cent	.96	24 per cent	.89	22 per cent
100 per cent		1.84	3.5 per cent	.95	1.9 per cent	1.84	3.5 per cent	.95	1.9 per cent

*Four-ounce polyethylene bottles, approximately one-half full (50 cc.)
**Figures given are loss per month.

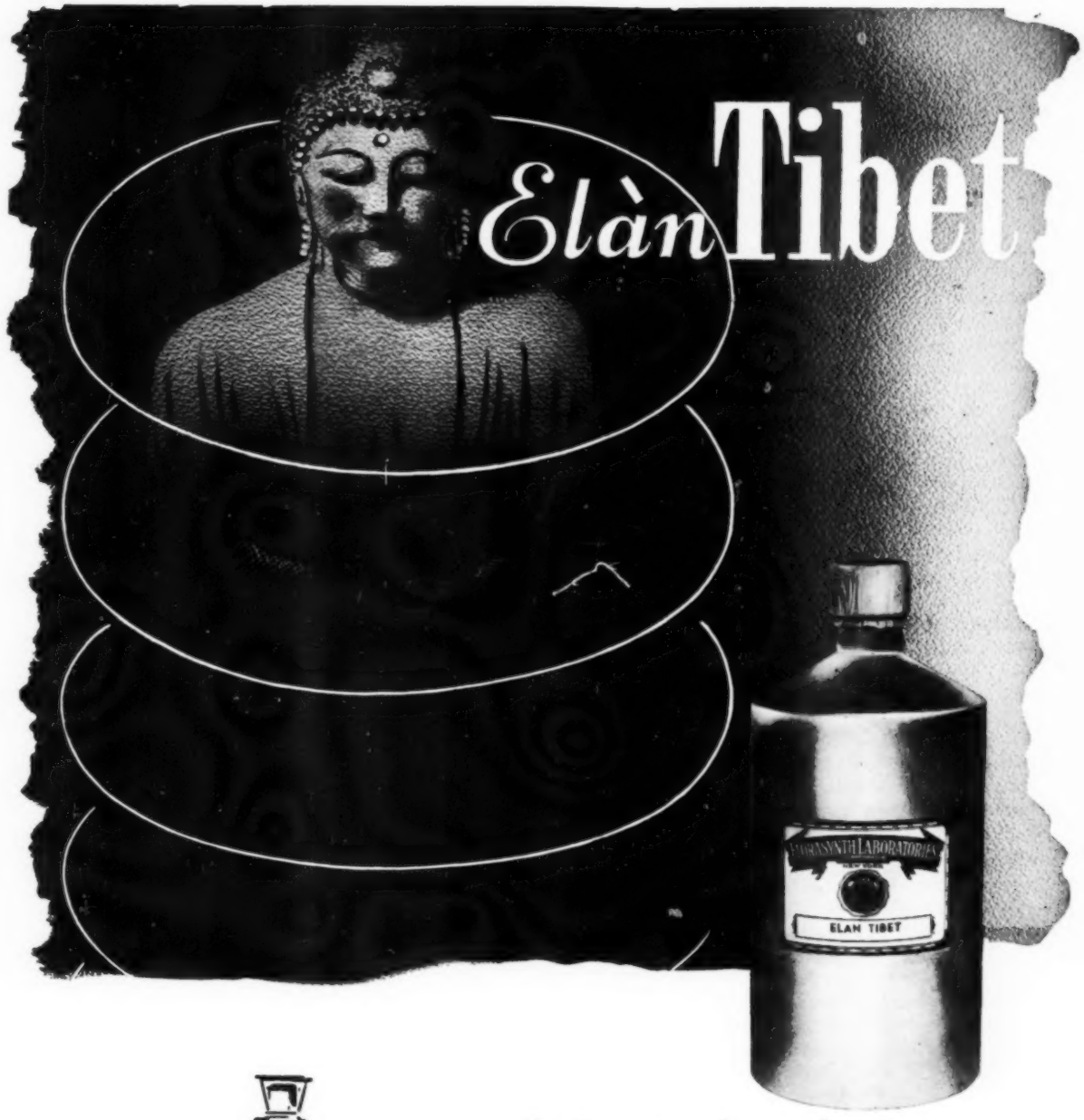
TABLE III

Substance	Period of Time	2 Per Cent Oil in 95 Per Cent Alc.† Total Loss	Actual Loss of Oil	2 Per Cent Oil in 70 Per Cent Alc. Total Loss	Actual Loss of Oil	2 Per cent Oil, 10 Per Cent "Tween 60" in Water Total Loss	Actual Loss of Oil
Eugenol	1 mo.	.15	.01	.13	+ .02	.10	.06
	2 mos.	.28	—	.26	+ .02	.20	.10
	3 mos.	.41	—	.40	+ .03	.32	.15
	4 mos.	.57	.02	.55	+ .01	.44	.20
	5 mos.	.70	—	.70	+ .01	.55	.24
	6 mos.	.83	.01	.86	—	.66	.28
Acetophenone	1 mo.	.20	.06	.20	.05	.55	.51
	2 mos.	.36	.08	.37	.09	.88	.78
	3 mos.	.52	.11	.56	.13	1.13	.96
	4 mos.	.71	.16	.75	.19	1.30	1.06*
	5 mos.	.90	.20	.94	.23	1.42	—
	6 mos.	1.03	.21	1.14	.28	1.52	—
Diphenyl Methane	1 mo.	.24	.10	.60	.45	.55	.51
	2 mos.	.46	.18	.92	.64	.84	.74
	3 mos.	.65	.24	1.29	.86	1.04	.87
	4 mos.	.88	.33	1.56	1.00*	1.18	.94
	5 mos.	1.00	.30	1.79	—	1.28	.97
	6 mos.	1.25	.43	2.00	—	1.37	.99
Methyl Benzoate	1 mo.	.23	.09	.31	.16	.75	.71
	2 mos.	.43	.15	.55	.27	1.02	.92
	3 mos.	.61	.20	.82	.39	1.19	1.02*
	4 mos.	.90	.35	1.09	.53	1.26	—
	5 mos.	1.05	.35	1.34	.63	1.35	—
	6 mos.	1.18	.36	1.54	.68	1.43	—
Limonene	1 mo.	.5	.4	1.1	.95	.9	.86
	2 mos.	.8	.5	1.3	1.0*	1.0	.9
	3 mos.	1.1	.7	1.5	—	1.2	1.0*
	4 mos.	1.4	.85	1.7	—	1.25	—
	5 mos.	1.6	.9	1.8	—	1.3	—
	6 mos.	1.8	1.0*	2.0	—	1.5	—

		95 Per Cent Alc.	70 Per Cent Alc.	10 Per Cent "Tween 60" in Water
Controls	1 mo.	.14	.15	.04
	2 mos.	.28	.28	.10
	3 mos.	.41	.43	.17
	4 mos.	.55	.56	.24
	5 mos.	.70	.71	.31
	6 mos.	.82	.86	.38

†Each bottle contains 1 gram of oil/50 grams of solution; volume, approximately 62 c.c. in alcoholic media.
*At this point the perfume material has been exhausted.

95 Per cent Alc.°



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Animal Health

Canine Leptospirosis

According to a note in the *Journal of the American Veterinary Medical Association* (122:171, 1953), the veterinary clinic at the University of Missouri reported an increase in the number of cases of canine leptospirosis in the fall of 1952. The animals, when presented at the clinic, are usually in a dehydrated condition with a history of sudden onset, vomiting, and hemorrhagic diarrhea. Usually, a severely injected scleral conjunctivitis, subnormal temperature, ecchymotic hemorrhages in the mouth, pharynx, and skin, with a severe icterus are evident by the third or fourth day. The dogs frequently exhibit soreness in the abdominal region and the limbs and refuse to move. Treatment should be started as soon as possible. One-half gram of streptomycin plus 400,000 units of penicillin twice daily is usually recommended, along with blood transfusions and injections of dextrose and saline solution, and a highly nutritious diet.

Function of Antibiotics

In a paper presented at the Cornell Nutrition Conference for Feed Manufacturers, L. C. Norris (through *J. Am. Vet. Med. Assoc.* 122:127, 1953) pointed out that many antibiotics have the property of promoting the growth of animals. Among these are aureomycin, bacitracin, penicillin, terramycin, and possibly others. The manner in which they function is not clearly understood but the several hypotheses have been advanced. After considering the various theories, Norris feels that the evidence indicates that: (1) Antibiotics do not promote animal growth by direct effect on metabolism but may promote absorption of some minerals. (2) New, clean quarters may exert the same effect on growth as additions of antibiotics because of the presence, in the old quarters, of bacteria capable of producing disease, or of destroying essential nutrients, or of competing with the body for essential nutrients. (3) Antibiotics may promote the growth of bacteria which are able to synthesize essential food nutrients or to increase the synthesis of such substances.

Nutrition in Cattle Sterility

According to W. Hansel (through *J. Am. Vet. Med. Assoc.* 122:126, 1953) carotene, vitamin A, calcium, phosphorus, and iodine deficiencies did not contribute to sterility, while cobalt and copper deficiencies may have been a factor. This is the summary of results collected by a mobile laboratory which visited 28 herds containing 1,533 cows and heifers of breeding age in New York State. Blood samples were obtained from 275 animals of breeding age (17.9 per cent) on these farms. These included all cows having a history of breeding trouble and an equal number (by herds) of cows with a normal breeding history. The problem cows were divided into five groups: (1) four or more services without conception; (2) returned in heat two to five months after last service—abortion observed in about half; (3) absence of heat; (4) nymphomania; (5) retained placenta, metritis, and vaginal discharge. A reduced hemoglobin was noted in all anestrous cows, and all of the nymphomaniacs had cystic ovaries and a high plasma protein.

New Hormone for Sterility in Cattle

As noted by H. L. Easterbrooks and W. N. Plastridge (*J Am. Vet. Med. Assoc.* 122:286, 1953) hormonal imbalances, requiring the use of estrogenic substances to effect a recovery, account for a definite percentage of cases of sterility. Hence, the interest in estradiol cyclopentylpropionate, known as ECP, a new product possessing marked estrogenic activity. Clinical observations indicate that intramuscular infection of the hormone ECP is probably the most effective method now available for inducing heat in cattle even though in some cases a normal cycle is not reestablished. This product seems to have considerable value, particularly in the treatment of anestrus and retained corpus luteum. Cases of pyometra, silent heat, mummified fetus, and retained placenta may also respond to ECP treatment. A relatively high incidence of persistant heats has been observed following intramuscular injections of ECP, but it is doubtful that the incidence exceeds that caused by other effective estrogenic substances commonly employed.

Antibiotics in Swine Nutrition

A comprehensive survey of the literature on the use of antibiotics in swine rations, revealed to R. Braude, H. D. Wallace and T. J. Cunha (*Antibiotics & Chemother.* 3:271, 1953) that five antibotics effectively stimulate growth of swine. These are aureomycin, penicillin, streptomycin, terramycin, and bacitracin. Other antibiotics are ineffective or have not been adequately tested. Under normal conditions of diet and health, it appears that penicillin, streptomycin, and bacitracin increase the growth rate of growing-fattening pigs about 10 per cent. Under similar conditions aureomycin and terramycin are approximately 30 per cent more effective on the average than penicillin, streptomycin, and bacitracin, and elicit an average improvement of around 15 per cent. Under certain conditions of stress, such as inadequate rations and digestive disorders, the antibiotic effect is much more pronounced. All five antibiotics have permitted an improvement in feed efficiency of a magnitude ranging from 2 to 5 per cent. Again, under conditions of stress, this improvement has been much greater. Runts respond to antibiotic feeding more strikingly than normal pigs. In 12 comparisons an average growth stimulation of 82.2 per cent was recorded. Antibiotics appear to be most effective during the early growth period. However, there is ample evidence to indicate that they significantly stimulate growth of hogs during the late stages of fattening as well. It is important that the antibiotic not be withdrawn from the ration at any time during the growing-fattening period.

Studies on pasture have resulted in an average improvement in growth of 13.7 per cent as a result of antibiotic supplementation. This compares favorably with results obtained under dry lot conditions. Type of ration materially influences the antibiotic response. Other

factors being equal, pigs fed a ration with better over-all nutrient balance will respond less to antibiotic supplementation than those on a poorer ration. Although it is true that poor rations are improved considerably by antibiotics, these rations are still incapable of top performance. Antibiotics should not be looked on as substitutes for well-balanced rations.

The evidence clearly indicates that antibiotics are effective growth promoters irrespective of the presence of vitamin B_{12}. On the average a better response was noted when a source of vitamin B_{12} was included. Studies involving other vitamins, such as riboflavin, pantothenic acid, and niacin, have been in poor agreement. Additional, carefully controlled experiments are needed to clarify the relationship of vitamin requirement to the antibiotic response.

The observation has been made that antibiotics exert a "protein-sparing" effect when added to rations low in protein. This is an extremely important development, and if further investigations establish this finding a valuable contribution will have been made. Other dietary relationships which are necessarily involved must be given careful consideration in this regard.

Chloromycetin for Kennel Cough

Infectious bronchitis, or so-called kennel cough, says J. E. Cook (*N. Am. Vet.* 34:351, 1953) is a highly contagious respiratory disease of young dogs, especially those under 18 months of age, which have not previously been exposed. It is laryngeal or tracheal at first and, in young or debilitated subjects, bronchitis follows. The contagiousness of this disease and its tendency to be unresponsive to treatment during the first six or eight weeks, in most cases, have heretofore marked this infection as being quite difficult to treat.

With the advent of chloromycetin, however, kennel cough has become more amenable to treatment. Cook used chloromycetin palmitate, a product which is highly palatable to dogs, in the treatment of this condition in 14 dogs of various ages and sizes. Chloromycetin palmitate is an ester of chloromycetin and is readily hydrolyzed by enzymes in the duodenum, releasing active chloromycetin. Chloromycetin, rather than its palmitate ester, is absorbed into the blood stream.

When used at the rate of approximately 10 mg. per pound of body weight three times per day, this antibiotic substance yielded excellent results. The cough disappeared in four to seven days in every instance. Initial improvement was noted in the first two to five days of treatment (average of three days). No visible signs of toxicity or other complications were noted at any time.

Methylamphetamine as a Resuscitant

In experiments on dogs and cats that were anesthetized with pentobarbitone sodium, R. Clark and K. E. Weiss (*J. S. African Vet. Med. Assoc.* 23:79, 1952) found that the intravenous injection of methylamphetamine promptly restored the depressed blood pressure and respiration after both picrotoxin and nikethamide had failed. The dose of methylamphetamine was 10 mg. per 40 pounds of body weight. These investigators also observed that the intravenous injection of a mixture of pentobarbitone sodium and methylamphetamine caused immediate anesthesia followed by a reliable recovery, while five out of 10 cats given the barbiturate alone in the same dosage died from respiratory arrest soon after injection. The use of this mixture is therefore recommended.

Terramycin in Mastitis

A study has been made by J. Simon and E. G. Schmidt (*Vet. Med.* 48:61, 1953) to determine the therepeutic effectiveness of terramycin in streptococcic mastitis. The results of irritability studies indicated that terramycin, either in an ointment vehicle or in an aqueous solution, does not incite an inflammatory response of the bovine mammary gland and approximates penicillin in this respect. The results of field trials showed that terramycin ointment, 7.1 Gm containing 60 mg. of terramycin hydrochloride per Gm. was as good therapeutically as 100,000 units of penicillin in the treatment of mastitis caused by *Slr. agalactiae.*

Tick Control in Lambs

A number of different preparations and methods for tick control on young lambs was tested by G. C. Brander, K. W. Page, L. C. Stones and D. W. Jolly (*Vet. Rec.* 65:137, 1953). Dipping and spraying of very young lambs was rejected on account of difficulties of labor and transport of equipment. A derris dusting powder did not give sufficient residual protection, while greasy salves proved difficult to apply and caused blistering of the skin and some "mismothering." The best practical results were obtained with a liquid emulsion cream containing 2.5 per cent benzene hexachloride (0.3 per cent gamma BHC) applied with a sponge to the ears, axillae and thighs of the new-born lamb. This was simple to apply and gave good protection for two to three weeks and the treated lambs throve and remained free from infected tick bites and skin abscesses.

Vitamin B_{12} and Egg Hatchability

Investigations with fish meal and fermentation products containing vitamin B_{12} showed that this vitamin was required not only for growth of chicks but also for hatchability of eggs. In the work done by A. Mariakulandai and J. McGinnis (*Poultry Sci.* 32:3, 1953) experiments were conducted to determine the effect of vitamin B_{12} on hatchability of eggs, livability of chicks and egg production of hens. Crystalline vitamin B_{12}, injected at a 2 mcg. level into eggs from vitamin B_{12}-deficient hens, significantly increased hatchability and viability of chicks. The quantitative dietary requirement of vitamin B_{12} for satisfactory hatchability was found to be no more than 1 mcg. per kg. of diet. The weight of mature birds was not affected by the vitamin B_{12} supplements in this experiment.

Streptomycin for Vibriosis in Cattle

According to H. L. Easterbrooks and W. N. Plastridge (*Vet. Med.* 48:63, 1953) abortions, skipped heats (in many cases undetected abortion), and apparent delayed conception are the main clinical manifestations of vibriosis. The two latter are often more important than the first in reducing breeding efficiency and effecting the overall economy of the herd. Artificial insemination with streptomycin-treated semen and intrauterine streptomycin treatment of problem cows and heifers are the two most important factors of seven presented which may aid in the control of vibriosis.

It has been found that good reproductive and productive efficiency may be maintained by streptomycin therapy at negligible cost. Aureomycin and terramycin have also been employed with good results. Occasionally, aureomycin has proved irritating when administered to an animal that was not in heat. Preliminary data indicate that streptomycin intrauterine infusion at the heat prior to expected breeding as a routine practice may aid in improving reproductive efficiency in general in herds where vibriosis is a problem.

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Abreast Of The Markets

Markets Continue Extremely Quiet Period into May; Phenobarbital, Lower; Anise Oil Restricted

The markets were very much on the quiet side during the month of May, especially in the case of botanicals, as indicated by the graph on page 844 which showed no changes for the month. The essential oils were somewhat more active, the index having advanced slightly from 157.9 to 159.8. In this case, however, of the oils affecting the graph, only two changed in price: lemon advanced, and peppermint oil declined. There was a most interesting development in the essential oil market last month, in that orange oil is expected to become very short later in the year. It seems that the producers of concentrated juice have decided to add the essential oil to their product in order to give it more flavor stability and greater shelf life. In other words, there will be considerably less orange oil available to the essential-oil industry.

On the chemical side of the market, several important developments occurred, including the price increases in various salicylates, the reduction in Vitamin E, and the continued rapid pace in the very active glycerine market.

Phenobarbital Down to $4

Continuing the trend of price reductions because of competition from foreign manufacturers, domestic producers of phenobarbital last month lowered the price of that material to $4 a pound.

Homatropine methyl bromide, another item so affected, has been reduced to $10.50 an ounce. It had formerly been $13 an ounce for a 100-ounce package.

Two other chemicals fall in the same competitve category: theobromine was selling in this country at a price 15 cents higher than that which was being quoted abroad, and caffeine, which is quoted at $3 a pound domestically, is being sold in foreign markets at $2.90 a pound. It is very probable that the prices on these items will be readjusted in the next few weeks in order to meet this competition. In any event most domestic producers of these, and allied chemicals, have been keeping their eyes on European markets, where most of this price competition stems from.

Prices quoted in this section were current on the first of this month.

Cream of Tartar Steady

Demand for cream of tartar has remained at a very steady level for the past several months, in spite of the increased size of imports entering the United States. These foreign shipments have been made up mostly of lower-cost cream of tartar which has been offering severe competition to domestic producers. At the present time there is much more than enough to handle all needs.

Carnauba Wax Developments

The price of carnauba wax was $1.35 a pound toward the end of last month for the No. 1 material, and $1.12 for the North Country No. 3. Reports indicate that this price level in the spot market is very close to the market existing at the present time in Brazil. There is very little activity in this wax right now, probably because of the high cost of replacement. However, it is the general belief that if the spot market should become suddenly active, the Brazilians would undoubtedly advance their prices even more.

Cocoa Butter Lower

In keeping with the seasonal letup in consumption of this commodity, demand for cocoa butter has slumped considerably in recent weeks, as indicated in the reduced price which now stands at 67 cents a pound. Spokesmen indicate that they expect the market to become softer in the weeks ahead before it levels off.

Tighter Control on Anise Oil

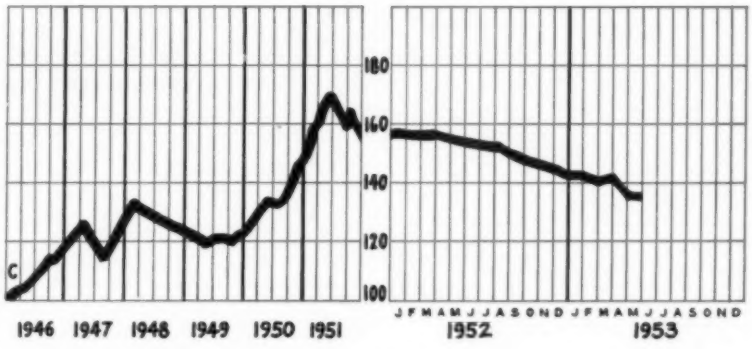
In order to clamp down as tightly as possible on the importation of both anise and cassia oils from Communist-dominated areas, the Foreign Assets Commission last month instituted a plan in which all importers of the oils are required to obtain licenses for each lot of oil which they receive.

Before the buyers may obtain these licenses, however, they must furnish proof that the essential oil did not originate in Communist territory.

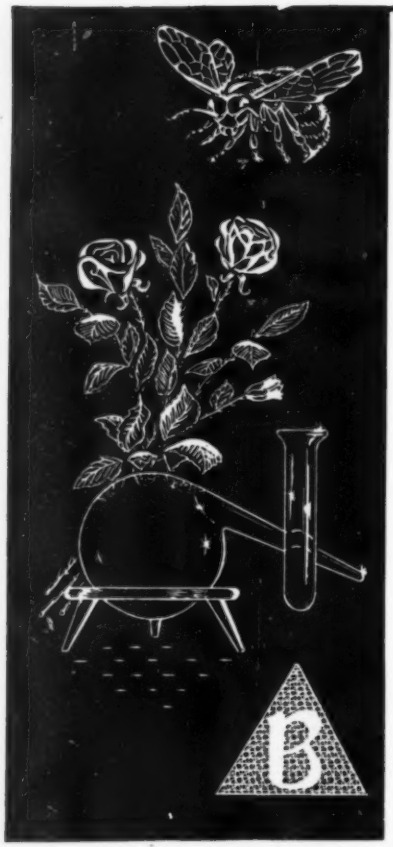
Dutch sources, which had previously

(*Continued on page 844*)

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.



The cosmetic raw materials index dipped very slightly from 135.9 to 135.8. Menthol was lower.



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Further Decline in Menthol, demand very Slack; Salicylates Advanced in Price; Vitamin E Down; Alcohol Market Brisk

Brazilian menthol dropped to $5.90 last month, indicating a further trend of softness in the market. There are several factors behind this development, one being that this period of the year is normally very slack as far as buying is concerned. In addition, all menthol imports are now under licensing restriction, but few licenses have been issued up to the present time.

With the Japanese material selling for $7.35 a pound, there is quite a difference between this menthol and the Brazilian type as far as price is concerned. This disparity is greater than most consumers wish to pay.

Brazil's crop, according to reports, is smaller for this year than had previously been expected. Perhaps this will have a strengthening effect when the fall and winter buying begins.

Salicylates Higher

Effective the first of this month, a large supplier of salicylates increased its prices on the various products. Salicylic Acid, U.S.P., is now being quoted at 48 cents a pound for a 250-pound drum for the crystals and 53 cents a pound for the same quantity of powder. Twenty-five pound drums are 58 cents and 63 cents a pound for the respective crystal and powder forms.

Methyl salicylate U.S.P. is now 53 cents a pound for a 500-pound drum and ranges up to 58 cents for 50-pound tin and up to 63 cents for a 25-pound tin.

Sodium salicylate U.S.P. powder and crystals have been advanced to 68 cents a pound for a 100-pound fibre drum and to 78 cents for a 25-pound drum.

Vitamin E Reduced

The price of Vitamin E last month was reduced from $250 per kilo to $225 per kilo, at a time when all vitamin sales were going along at a very brisk rate.

Alcohol Market Active

There was a brisk demand for alcohol last month, continuing the trend of recent months. Prices in both the synthetic and fermentation alcohols were unchanged, although, in the latter case, molasses costs have gone up a good deal since last year. It is very difficult to look ahead in this market at the present time because of recent actions on the part of the Reconstruction Finance Corporation in purchasing large quantities of alcohol. Whether or not this is going to continue remains to be seen.

Consumption of alcohol during the month of March exceeded that of February by more than 12,000,000 gallons, while March production was about 1,000,000 over that of the previous month. This increase, according to spokesmen in the industry, points to the stepped up demand for alcohol as the year progresses.

The following data on the supply, production, withdrawals, and stocks of ethyl, completely denatured and specially denatured alcohol during the month of March, 1953, as compared with March, 1952, were released last month by the Alcohol and Tobacco Tax division of the Bureau of Internal Revenue, Treasury Department.

Production

	Gallons	
	1953	1952
°Ethyl	46,836,739	41,128,586
*Completely denatured	44,082	46,946
*Specially denatured	30,154,824	21,877,277
Withdrawals		
°Ethyl, tax paid	2,171,052	1,860,626
tax free	56,224,238	40,939,433
*Completely denatured	45,234	33,531
Specially denatured	25,124,165	21,467,122
Stocks		
°Ethyl	64,237,630	95,361,420
*Completely denatured	17,517	51,571
*Specially denatured	14,891,211	13,985,270

*Wine gallons. °Proof gallons.

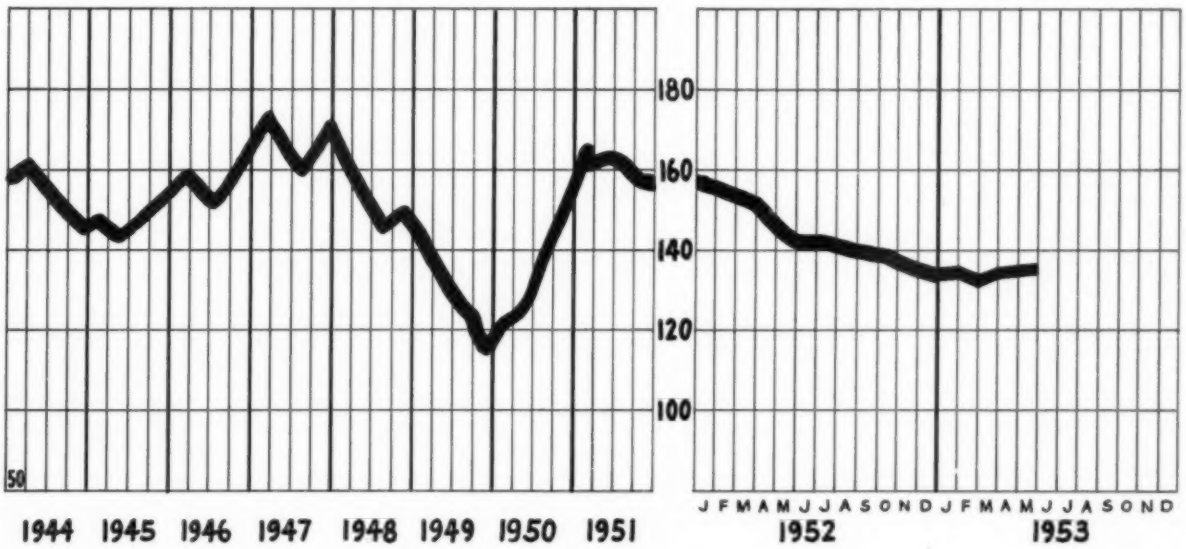
Benzaldehyde at 74c

Benzaldehyde appeared to be set for a steady period toward the end of last month when the price ranged between 74 cents to 80 cents a pound. It had formerly extended above $1 at the upper end of the range.

Sarsparilla Root Higher

In spite of the fact that there is only slight demand for the item, the price

50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for May went up slightly from 135.1 to 135.4.

MAY PRICE CHANGES

UP

Geranium Oil, Bourbon $1.50
Lemon Oil, Calif. 35c
Italian 45c
Methyl Salicylate 3c
Salicylic Acid 2c
Sarsaparilla Root, Mexican 3c
Sodium Salicylate 5c
Vanilla Beans, Mex., Whole 25c

DOWN

Caraway Oil 55c
Cardamom Oil $5
Carnauba Wax No. 1 2c
Cocoa Butter 3c
Dill Oil 50c
Ginger Oil $1
Menthol, Natural 10c
Nutmeg Oil 70c
Peppermint Oil, Natural 25c
Redist. 25c
Petit Grain Oil 55c
Phenobarbital 50c

of sarsparilla root advanced to 25 cents a pound, and extends up to 27 cents.

Agar Market Tight

Information on agar indicates that most of the last crop from Japan has been sold, a factor which will probably push the price higher—especially since no new material will be availabe until next January.

Ergot up 5c

New shipments of ergot from Dutch sources arrived in the United States, priced at $2.80 a pound, a 5-cent jump over previous spot quotations.

Cascara Sagrada Firmer

Cascara Sagrada remained at 36 cents a pound last month, although, according to some reports, it may advance in the months to come. These sources state that labor is on the scarce side at the present time on the West Coast, and as a result this year's yield of bark is going to be much less than that of last year. It is much too early as yet to predict the effect this will have on the market in general.

Glycerine Activity Continues

The demand for glycerine remained at a high level last month, with the production keeping pretty close to consumption, maintaining a safe balance. There are no signs of any price change in the immediate future, since heavy imports from Europe have been entering this country, and, coupled with domestic production, have helped satisfy Government needs in addition to private industry requirements.

Vanilla Beans Steady

There were some slight changes in the prices of vanilla beans, although the over-all market picture has not changed in several months. The Bourbon beans are still in the range between $4.50 and $5, while the Mexican whole beans, formerly $4.25, are also selling between $4.50 and $4. Mexican cut beans remained at $4. The Tahiti beans are virtually unobtainable at the present time, with the nominal price being $3.25.

The general belief in the market points toward a further price advance in the months to come.

Tighter Control on Anise Oil

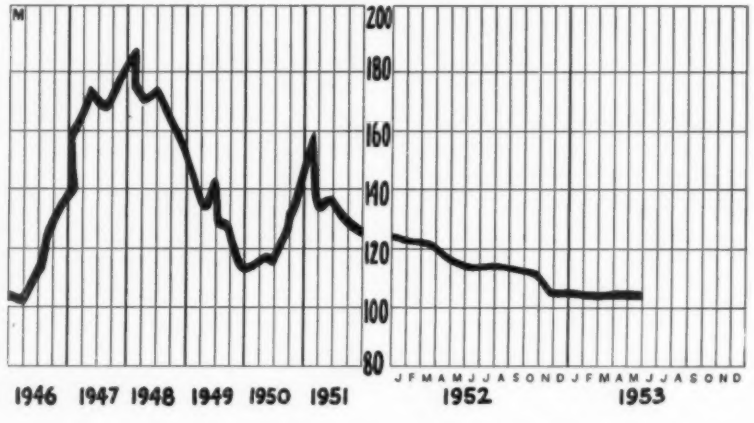
(*Continued from page 841*)

been supplying American customers with considerable oil, immediately reduced their prices, but it appeared doubtful that they would be able to continue selling to the American market on as large a scale as they had previously been doing. As one member of the trade put it, "It's pretty certain that anise oil is not produced in Holland. The question is where it originally comes from."

Taiwan Citronella Low

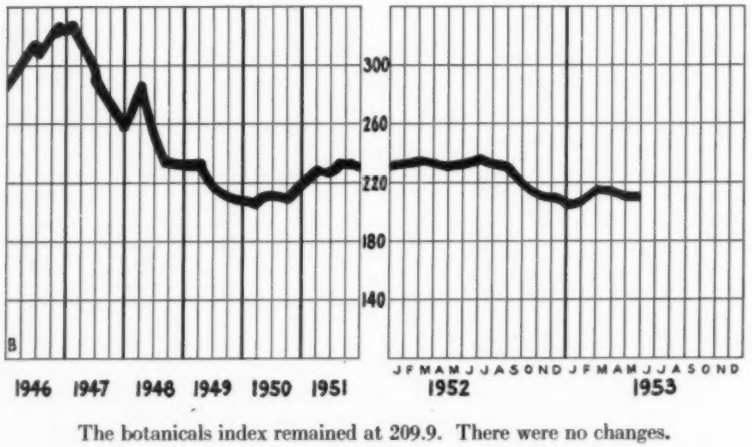
Stocks of citronella oil in Taiwan are believed to be small, according to a report in *Foreign Commerce Weekly*. Although official statistics showed exports of 1,149 metric tons in 1951 and 2,480 metric tons in 1952, these figures totaled 800 tons more than the reported production during that 2-year period. The

15 Medicinal Chemicals—Weighted Price Index. 1926=100.



The medicinal chemicals index declined a trifle from 104.5 to 104.3. Menthol was lower.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index remained at 209.9. There were no changes.

discrepancy may be due to inaccuracy in the collection of crop statistics. The report continues by stating that the figures supplied by the Department of Agriculture may have referred to purchases by the Central Trust Co. from the Citronella Oil Marketing Cooperative and local Farmers' Associations and may not have taken into account purchases by private dealers from individual farmers.

Exports in the first 11 months of 1952, in metric tons, were reported as follows: United States, 1,203; Hong Kong, 932; Japan, 119; United Kingdom, 48; Philippines, 26; Netherlands, 12; Singapore, 6; Western Germant, 4; and Belgium. 3.

Expect Shortage in Orange Oil

Up to the present time, there has been no recent change in the price of orange oil, but new developments very decidedly point to a much firmer condition in the second half of the year. Virtually all production opertions have ceased in the oil, now that the producing season has terminated.

With the consuming season now in full swing, the chances are that the stocks will be used up rapidly, bringing on firmer prices before very long.

An essential-oil house reports that Florida producers expect a rather short crop later this year. To verify this belief, this dealer quotes one producer in particular as follows:

"Our production this year is going to be somewhat less than I anticipated due to the short crop. I have talked to several of the other major producers of oil, and they are in the same position. As a consequence, I expect to see no carry-over whatsoever of Florida oil."

Another factor, and one which is unique in the orange oil industry, is that the producers of concentrated juice have decided to add orange oil to the concentrate, according to this source of information. These producers have found that the addition of the essential oil to the concentrates provides greater flavor stability and shelf life.

As a result, he reports, "Several hundred thousand pounds of oil are being used by the citrus industry itself which were not consumed last year. In fact, I have been approached by three canners to sell them oil for their current requirements."

Caraway Oil Reduced

The price of caraway oil went down from $3.15 to $2.60 a pound, with replacements from the origin easily accessible.

Lemongrass Steady

Lemongrass oil showed no changes, with the inside price remaining at $1.30, although there were reports that some prices from the origin were being reduced. Spokesmen in the industry indicated that there was enough oil on spot to handle all requirements without any trouble.

Geranium Oil Higher

Bourbon geranium oil reversed itself last month by advancing to $11.50 from the previous figure of $10. Although replacement costs have been declining on the oil in recent weeks, this reversal may indicate that foreign sources have decided to hold fast, or advance their quotations slightly.

Clove Oil Still Tight

There was no change in the very firm clove-oil market which last month maintained prices between $10.75 and $11. Some sources report that a little relief is expected toward the end of the summer and early fall, when new material arrives on the scene.

Peppermint Oil Reduced

Both the natural and redistilled peppermint oils went down a slight amount in May, indicating that there is ample material on spot to handle all requirements until the new-crop material arrives. The natural oil is now being quoted from $5.50 to $5.75, and the redistilled material, from $6 to $7.25. Spokesmen report that high-test oil is on the limited side, but they believe there are sufficient amounts to last in the interim.

These reduced prices have occurred, most likely, in anticipation of the new crop which will appear in a few months. The aim of dealers is to sell as much of last year's material as they can before the new-crop peppermint oil is available.

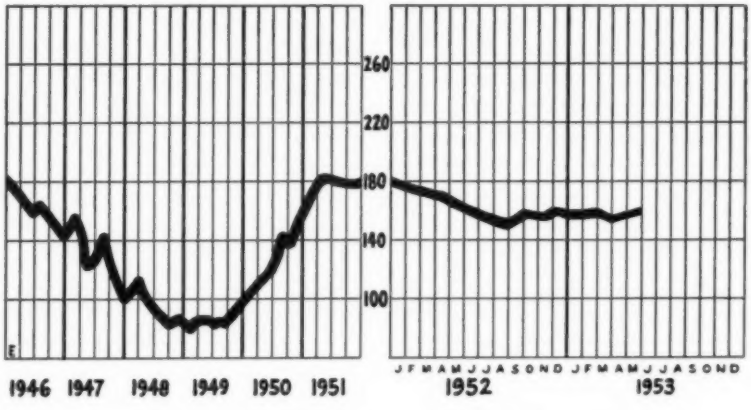
Lemon Oil Firmer

Reflecting the growing demand for soft drinks and other items in which this oil is used, the lemon oil price continued to advance last month and extended between $6.35 and $6.75 a pound. Because of the seasonal demand for these spring and summer refreshments, replacements for this oil are extremely limited at the present time, and it is expected to remain that way for the duration of the season.

Some oil has been arriving in this country from Italian sources, and has helped a great deal in easing the situation, but there is still a wide gap between demand and the smaller degree of production. The Italian oil continued to advance at the same time, and by the end of the month was being quoted in the range between $6.10 and $9.50.

Italian sources reported that there was some good-quality oil on hand, but this was being kept at a high price—and only small amounts were unsold. With this in mind, and considering that another crop is not expected to be ready until November, it appears that the price of the Italian oil will advance a good deal in the interim.

15 Essential Oils—Weighted Price Index. 1926=100



The essential oils index advanced from 147.9 to 159.8. Lemon oil was higher; peppermint oil was lower.

Polyethylene Packaging Problems

(Continued from page 836)

TABLE IV

Formulation	°Grams Oil per Bottle	Loss of Perfume Oil* One Month Loss Gms.	One Month Loss Per Cent	Two Months Loss Gms.	Two Months Loss Per Cent	Four Months Loss Gms.	Four Months Loss Per Cent
After Shave Lotion							
1 Oil 85 Alc. 95 per cent 42 Water	.5	.047	9.4 per cent	.08	16 per cent	.13	26 per cent
1 Oil 127 Alc. 95 per cent	.5	.006	1.2 per cent	.01	2 per cent	.02	4 per cent
Toilet Water							
4 Oil 111 Alc. 95 per cent 18 Water	2.0	.070	3.5 per cent	.15	7.5 per cent	.26	13 per cent
4 Oil 128 Alc. 95 per cent	2.0	.038	1.9 per cent	.08	4 per cent	.15	7.5 per cent

°Each bottle contained one-half of the formulation quantity, i.e., 64 cc. (approx. one-half full).
*These figures were arrived at by subtracting the loss found to occur in controls using the appropriate menstruum without perfume. We assumed that the oil does not affect the rates of alcohol and water permeation.

TABLE V

COMPARISON OF EFFECT OF 95 PER CENT ALCOHOL AND MINERAL OIL ON WEIGHT LOSS

Substance	2 Per Cent in Alcohol Loss Gms.*	2 Per Cent in Min. Oil Loss Gms.	4 Per Cent in Alcohol Loss Gms.	4 Per Cent in Min. Oil Loss Gms.	8 Per cent in Alcohol Loss Gms.	8 Per Cent in Min. Oil Loss Gms.
Methyl Benzoate	.13	.46	.17	.47	.31	.96
Acetophenone	.06	.45	.11	.44	.19	.89
1 per cent Methyl Benzoate 1 per cent Acetophenone	.08	.21				
2 per cent Methyl Benzoate 2 per cent Acetophenone			.14	.47		
4 per cent Methyl Benzoate 4 per cent Acetophenone					.24	.93

*The loses were determined for a one month period on bottles approximately half full (containing 50 c.c.)

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MODULAN is a chemically treated lanolin containing all the constituents of lanolin deliberately modified by a unique treatment to introduce new and valuable properties.

It represents a radical departure from lanolin in structure, function and odor, and more closely approximates the normal human skin fat.

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SOLUBILITY— Because of induced chemical differences in molecular structure, MODULAN is far more hydrophobic than lanolin and forms clear solutions in mineral oil.

TEXTURE— MODULAN solutions leave water-resistant protective films which are inherently softening and prevent defatting. These films are waxy rather than tacky and are very agreeable to the touch.

COMPATIBILITY— Because of its outstanding compatibility with oil-in-water emulsions and with soaps and shampoos, MODULAN can be used in high concentrations without affecting stability and foaming.

In addition to the above mentioned advantages, MODULAN deposits an emollient, protective film and is therefore highly effective in baby oils, hair dressings, soaps, shampoos, oil-in-water creams and lotions, lipstick, and other cosmetic and pharmaceutical products.

Detailed information available on request.

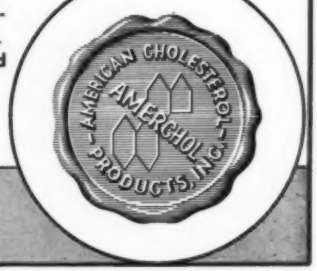

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TABLE VI
MIXTURES

Solution Strength	Grams in each bottle: Methyl Benzoate	Grams in each bottle: Aceto-phenone	Combined loss of Oils per Month: 95 Per Cent Alcohol: Loss Gms.	95 Per Cent Alcohol: Loss Per Cent	Mineral Oil: Loss Gms.	Mineral Oil: Loss Per Cent	Loss Gms.
1 Per Cent Methyl Benzoate 1 Per Cent Acetophenone	.5	.5	.08	8 per cent	.21	21 per cent	
2 Per Cent Methyl Benzoate 2 Per Cent Acetophenone	1.0	1.0	.14	7 per cent	.47	23 per cent	
4 Per Cent Methyl Benzoate 4 Per Cent Acetophenone	2.0	2.0	.24	6 per cent	.94	23 per cent	
8 Per Cent Methyl Benzoate 8 Per Cent Acetophenone	4.0	4.0	.45	5.6 per cent	1.54	19 per cent	
50 Per Cent Methyl Benzoate 50 Per Cent Acetophenone	25.0	25.0					1.57
25 Per Cent Methyl Benzoate 75 Per Cent Acetophenone	12.5	37.5					1.31
75 Per Cent Methyl Benzoate 25 Per Cent Acetophenone	37.5	12.5					1.90
100 Per Cent Methyl Benzoate							1.84
100 Per Cent Acetophenone							.95

TABLE VII
DISTENTION OCCURRING IN FIVE WEEKS IN ONE-HALF FILLED POLYETHYLENE BOTTLES

Substance	Top Half of Bottle Unfilled Area: Diameter	Middle of Bottle On Hip at Oil Level: Diameter	Near Base of Bottle Swelled Area: Diameter
Average Empty Bottle	4.35 cm.	4.32 cm.	4.36 cm.
Mineral Oil	4.37 cm.	4.48 cm.	4.49 cm.
Myrrh Oil	4.40 cm.	4.60 cm.	4.63 cm.
Resin Opoponax (50 per cent diethylphthalate)*	4.41 cm.	4.63 cm.	4.63 cm.
Patchouli	4.39 cm.	4.61 cm.	4.61 cm.
Nigerian Balsam	4.39 cm.	4.64 cm.	4.66 cm.

(*Continued on page 848*)

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Polyethylene Packaging Problems

(Continued from page 847)

substance between the two media, polyethylene and solvent vehicle. The chemicals (See Table III, P. 836) in some of the solutions were actually exhausted after several months in polyethylene. In terms of practical application, we can expect the worst effects in water and in water and mineral oil emulsion preparations, and we can see that alcoholic preparations should be formulated without water, where possible.

Yet a third factor, important insofar as all perfumes are blends, is the effect of mixtures. Research on rubber permeability to benzene and toluene and mixtures of the two has shown synergistic effects are possible. When one sees the variations available for a two-component system, the prospect of a typical perfume seems staggering.

Chemical test methods have been established recently for a simple binary system of acetophenone and methyl benzoate which determine three per cent to four per cent changes in composition in alcoholic, oily and aqueous mediums provided neither component is present at less than one per cent. Results of these tests will not be available for several months to come.

Gravimetric assays have been carried out on mixtures of acetophenone and methyl benzoate using one per cent, two per cent, four per cent, and eight per cent of each in both 95 per cent alcohol and in mineral oil. (See Table VI, Page 847.)

These figures, of course, show the total combined loss, and chemical assays must be made to determine whether the rate of transmission of each individual item has been changed by the presence of the other. However, we can get some idea of the influence of the second chemical by examining the loss rates established for the single materials (Table II, P. 836). The rate of loss of a mixture is the same as the average of the two components, using the loss of each which obtains at the level of total oil content. (Table V, P. 846.) This may or may not indicate a general pattern. At least, in the particular case of these two chemicals, a relationship does appear to exist between permeation of the single materials and their mixtures. It is encouraging to note that there is no marked deviation from the expected losses. More complex mixtures would become very difficult or impossible to evaluate.

Another difficulty is that accurate analytical methods for diluted aromatics are not readily available. If the error of the determination is large in proportion to the expected loss, results are sure to be ambiguous. Chemical analysis has proved very difficult, especially when working with low concentrations of mixtures, for mutually exclusive quantitative methods must be devised which will work in the presence of the chosen test media. Radioactive carbon 14 could be employed using techniques already successfully applied to similar problems, and would furnish fairly accurate results in regard to

the effect of chemical structure, concentration, base product and temperature. The drawback is the high costs involved in synthesizing the test chemicals and the subsequent analyses. Colorimetric and spectrophotometric assays as described in the literature did not yield satisfactory results.

A fourth variable, the degree of permeation in liquid phase versus vapor phase has been examined by Parliman[5] and Meyers and Phillips[6] using a few highly volatile materials such as toluene, ethyl acetate, and hexane; with these, significant quantities permeate in the vapor phase, showing values of the order of ½ to ¼ the liquid phase. Our tests with a few perfume chemicals with more typical volatility show the vapor permeation a much smaller proportion. Nevertheless, it cannot be disregarded, for it will be a significant amount when the cosmetic vehicle exerts but slight solvent action on the aromatic.

The inescapable conclusion drawn from all these surveys is that the setting up of the experiment to give reliable results which can be translated to finished product formulations is most difficult and, further, that test methods themselves present a complex research problem.

The collapse of polyethylene bottles has plagued the finished goods manufacturer so often and in such an unpredictable fashion as to make it a subject of major concern. There is no side-stepping the consumer's rejection of a sadly dented, tilted, misshapen, polyethylene package. The fabricators have designed special shapes, such as flat panels and accordion sides, to hide the effect of collapse. Salesgirls are told to surreptitiously open and quickly close the bottle before passing it over the counter.

Our observations have led us to some opinions on this score. Given the extreme case of toluene where collapse occurs quickly and invariably, we find two primary factors involved, absorption and distention. In the course of two hours, using 120 cc. of toluene in a standard four-ounce polyethylene bottle, we see an apparent volume loss of 7.4 cc., while there is only an insignificant weight loss in the third decimal place. We can account for 6.4 cc. by the increase in cubic capacity of the bottle and find that 1 cc. is taken up by the bottle wall. This is probably also accompanied by softening of the inside walls, a change in stress favoring collapse. This entire mechanism offers an explanation for cases of collapse where there can be no oxygen absorption or loss of material by permeation and evaporation. We feel this may be the reason for collapse in certain soap, detergent and oil-emulsion products, i.e., absorption and distention with an attendant decrease in internal pressure.

Certain materials of very low volatility, such as mineral oil, myrrh oil and Nigerian balsam oil, produce obvious visible distention with or without collapse when held in partially filled polyethylene bottles. The bottles bulge, starting at the top of the liquid and continuing with a slightly increasing diameter to the base.

The increase in capacity calculated from these measurements can run between 10 cc. and 20 cc. Pressure

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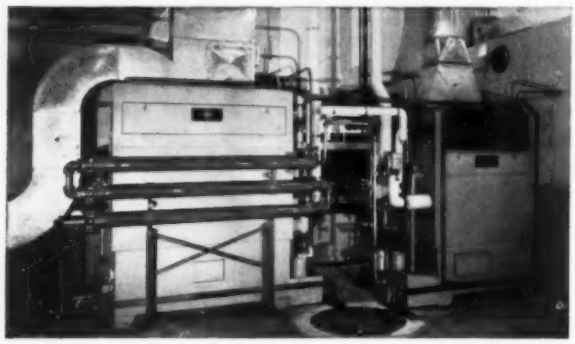

NIAGARA CONTROLLED HUMIDITY AIR CONDITIONING

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drop and tendency to collapse will be greatest with very full bottles. The wall thickness also appeared to increase slightly, but since the walls normally vary by five per cent to 10 per cent, no precise figure can be given. An attempt was made to determine the distention on collapsed bottles in which various more volatile materials had been stored, but the deformation occurring in these cases proved permanent, preventing any accurate cross-section measurement.

It has been found that the permeability constant is independent of thickness except in the case of thin films where variations toward greater permeability are noticed. This is most likely due to the increasing importance of surface imperfections and thin spots. The use of a thicker bottle within the limits of finger compressibility will not materially change the loss picture.

A case in point indicating the difficulty of correct interpretation of experiments is the recent article by Marriott.[7] His tests with emulsions encased in thin polyethylene bags shows loss in weight accompanied by increase in volume and pressure. He theorizes on the mechanism involved and he may be correct in terms of thin membranes. But no one packaging in a bottle of 40 mils wall thickness has thus far reported this effect but rather a contrary one—decrease in pressure and bottle collapse.

Inasmuch as an occasional mechanical failure is reported with polyethylene bottles, particularly in the shoulder area, it should be pointed out that this factor has been studied by the Bell Laboratories[8] in regard to cracking of stressed polyethylene sheathing on electrical cables. Many of the materials tested and found active are akin to those used by the perfume and cosmetic industry.

Emulsion breakdown has occurred in polyethylene packages in a sufficient number of instances to warrant some comment. Observation indicates that emulsion breaking involves growth of the dispersed phase droplets. There are probably two important mechanisms by which growth occurs—by merging during collision and by solubility effect. This latter situation is usually only significant when there are large and small droplets present, for the material in the small droplets is more soluble than in the large droplets. Meissner and Chertow,[9] in listing the causes contributing to breaking of unstable emulsions, noted that separation is effected through the use of a porous medium which permits the passage of only that phase which wets it. Considering the wall of a polyethylene bottle as a mutual solvent or bridge, it can furnish an area for coalescence even where the emulsion is uniform and fine, for it will act as either a large drop of the oil phase or as an oil wettable membrane. Additional factors to be considered are (a) the polarity of dispersed droplets and the alteration of their attractive or repulsive forces in the presence of polyethylene; (b) the orientation of the dispersing agent on the face of the polyethylene film: for example, soaps, alkyl sulphates and fatty acid esters containing long lipophylic groups would tend to line

up against the polyethylene thus initiating the destruction of the delicate balance of the emulsion.

The great temperature dependence of permeability has been frequently shown.[10-11] Barrier[12] has found that the permeation of permanent gases through organic films is an exponential function of the absolute temperature. Doty, Aiken and Mark[13] have confirmed this behavior in regard to the water permeability of polyethylene.

This is understandable, for increase in temperature raises vapor pressure and, to a degree, affects the solubility of the permeating substance. Further, higher temperatures increase the thermal agitation which exists in the polyethylene network, opening up at a more rapid rate the intramolecular "holes" through which diffusion occurs. Higher temperatures also favor evaporation from the external wall of the polyethylene container, thus constantly maintaining a concentration gradient through the film. Our measurements on methyl benzoate which had reached a constant transmission rate at room temperature (70° F.) showed a fourfold increase when held at 100° F. This effect is so large that consideration should be given to shipping and storage conditions in every case.

Let us now suppose a working list of the permeation rates of the common perfume materials has been obtained in terms of 100 per cent material, and that we disregard the effects of mixtures, concentration, medium or vehicle, storage temperature, bottle wall thickness and so on. We must then decide on some arbitrary line below which lie materials we will use, and above which lie materials deemed too fugitive for proper shelf life. Realize that the closer the list is held to best performance, the smaller it will be, and the fragrances compounded from this list will depart most from the ideals of beauty and brilliance. Practically all top notes are contributed by light esters and terpenes, and these same are the ones that most rapidly permeate. Furthermore, the high permeability of polyethylene to oxygen will cause rapid deterioration of citrus oils and sensitive aldehydes. Obviously, an odor containing a percentage of suspect materials can have a better character than one designed for maximum stability over long periods. The perfumer who draws his line to include more borderline materials has the greatest advantage in scope and first sales appeal.

We all know that in order to create a good fragrance light, medium and heavy notes have to be blended judiciously. However, any well-constructed odor containing these three phases will become unbalanced after extended contact with polyethylene. The light notes will disappear far more rapidly than the medium notes, and the medium notes will permeate far more rapidly than the heavy ones. The cosmetic manufacturer will not always wait for a year's shelf test, and few of these facts are strikingly noticeable immediately, or even after the first months. The use of a higher percentage of perfume will not change the problem. After a while the unequal rate of permeation will have thrown the

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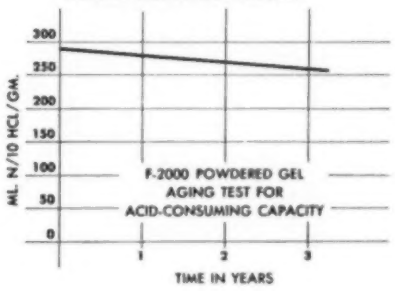

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fragrance completely out of balance. This unbalancing of the fragrance, as said before, may not be too noticeable in the beginning of the shelf test, but do not be misled by the fact that the first few months do not show any appreciable differences. After an extended shelf life of 6 to 12 months, it may be impossible to recognize the fragrance as identical with a sample held in glass.

If we make a special perfume using a group of materials which have a similar permeation rate, we do arrive at a more satisfactory situation, for here the components would be lost uniformly and the use of compensatory higher percentage of perfume should serve to maintain a reasonable volume of odor throughout a normal shelf life. Such an odor, if presented to the manufacturer for adoption in his line would not survive competition with other odors created for use in glass containers. The ideal of good fragrance with no appreciable loss is patently unobtainable.

The manufacturer of an established preparation with a known and accepted odor must face the possibility that neither the preparation nor the odor are completely suitable for use in polyethylene. The manufacturers of products which are sold for their fragrance value only have an even greater difficulty than the manufacturers of functional products. The fragrance manufacturer who is producing a toilet water, after-shave lotion, cologne, or perfume is selling one thing—his fragrance; and today it is impossible to create a quality odor containing all the light, medium and heavy notes necessary for a worthwhile fragrance and still have it stand up in polyethylene. No food or liquor manufacturer can indiscriminately use polyethylene because of the serious consequences of either oxygen absorption or loss of the delicate flavor that may constitute the basis of his competitive position.

You manufacturers cannot change your products, and it is impossible to change materially the characteristics of polyethylene. Nevertheless, in the past similar difficulties have been overcome. Remember, cellophane did not start out the wonderful and useful product it is today. The producers have learned to coat and laminate to fit it for its end use.

We, therefore, have to look in another direction to make the polyethylene container a suitable package. Instead of trying to create fragrances and flavors which will not appreciably change in polyethylene and, after great efforts, coming up with compounds which are not acceptable when judged by artistic standards, by far the more logical way would be to make the container suit the contents and not attempt to make the contents suit the container.

There are paths open in finding blending materials which will reduce permeation.

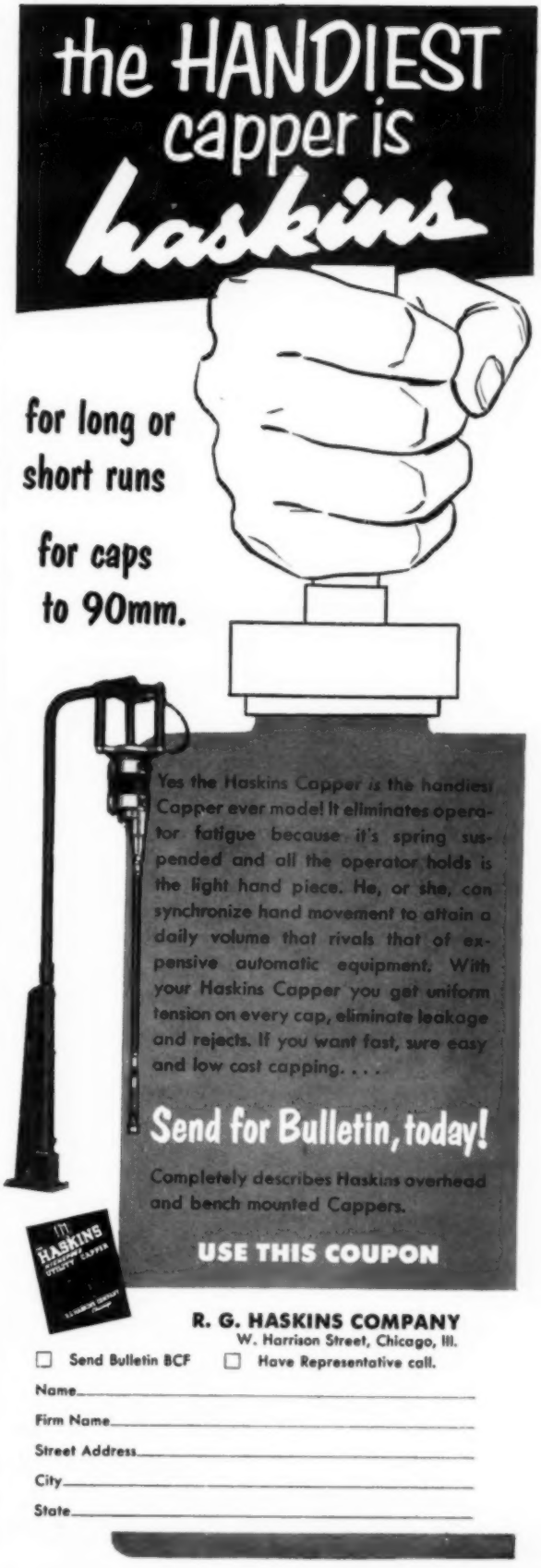
The effects of plasticizers have been mostly investigated in terms of merchanical characteristics and their addition is often accompanied by profound changes in flexibility, tensile strength, ease of moulding, and so on. Very little information has appeared regarding change in permeability with incorporation of second

materials. Van Amerongen[14] has stated that the addition of plasticizers has had little effect on the rate of gas permeation, while Brubaker and Kammermeyer[15] noted radically different behavior for films containing varying amounts of one plasticizer. Practically no attempts have been made to reduce essential-oil permeation by using blends of polyethylene and other resins, though possibilities exist with halogenated ethylene, chlorinated rubber and many others. Polyisobutylene has been commercially blended with polyethylene, but the mixture shows no marked difference in permeability, and it is much poorer in physical characteristics and more difficult to mould. While the presence of a plasticizer may not change the rate of diffusion, it can alter the solubility—and since permeability is the product of these two factors, reduction of solubility can effectively reduce transmission rate.

The field of coatings has only been cursorily approached although, to date, several manufacturers have developed flexible coatings which adhere to polyethylene. These films have been based on toluene solutions of flexible resins and on rubber latex emulsion. We have found that Saran Latex also adheres to and flexes with polyethylene. There is available an excellent film-forming barrier material against aromatic oils, namely, polyvinyl alcohol, but, unfortunately, it will not stick to polyethylene. One of the major polyethylene fabricators has a process for treating the bottle walls to improve adherence, and we have successfully applied polyvinyl alcohol to this surface. We have also found it possible to mix and coat with a mixture of polyvinyl alcohol solution and rubber latex emulsion, but as yet have not arrived at perfect enough films to test permeability rate. Experiments are in progress using fluorine and ozone to create a film on the surface to improve adherence or even serve as a barrier. Although the technical difficulties of application are greater in making an internal film, this is the logical area for treatment, for then, it is protected from abrasion, it isolates the polyethylene from the product, and it forestalls the hazard of blister formation which can occur in external coating. The use of metallic coatings formed by vaporization, chemical deposition, or electrolytic deposition has been investigated. The consensus was that such films do not present a continuous surface and thus would not greatly influence transmission. Should coatings become feasible, there would be no great drawback to designing special impervious films resistant to the particular product contained.

Some work has been done on the incorporation of barrier materials, either metallic powders or inorganic fillers. When used in the percentages required to cut down permeation, the plastic is hard, but it may not always be necessary to maintain the flexibility provided the other qualities are retained.

Experiments in Hartwell, England, in which polyethylene was exposed to bombardment in an atomic pile, has recently led the General Electric Co. to a proc-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The Senate Investigating Committee meeting of Joe McCarthy and N. Y. Post Editor James Wechsler demonstrated that both men have more in common than a hatred of Communism. They share a mutual contempt for one another.

●

Senator Henry Cabot Lodge's defense of the U.N. seems to have opened a lot of eyes among those people who had hung a black eye on the U.N. when the Democrats were in power. To amend an oldie, "the grass always seems greener" and the politics Redder in the other feller's Administration.

●

Vice-President Richard Nixon's announced desire to be invited to the next Olympic Games, in Australia, poses a financial problem: Shall the trip be financed by the Government, Nixon himself or those public spirited citizens who wanted to be sure he didn't go broke as a United States Senator?

●

Now that ex-President Truman has settled down to penning his memoirs, some bright young merchandiser should add to his fortune. Imagine a department store advertising tie-up with those sections of the Truman book that should deal with mink coats and deep freezers!

●

The New York political situation is the hottest since the late Fiorello La Guardia left his City Hall desk to ride fire engines. Dewey is being called, "The Governor of New York City," and Mayor Impelliteri, "the greatest executive we never had."

●

Proposed balancing of the Federal Budget before taxes are reduced seems to be the Capital watchword these economy-minded days. The Administration has every confidence in achieving its aims if Russia doesn't ask for more trouble and our Allies don't ask for more money.

●

The Cosmetic Industry views with equanimity the differences of opinion that are exchanged by Republicans and Democrats according to Parliamentary Procedure. The only thing that stumps us is when they're going to call each other's bluffs instead of calling each other names.

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ess for physically altering the plastic by irradiation from a different source using a powerful electron beam. A great improvement in heat stability was effected by this curing process and since it is believed that the treatment affects cross-linkage and solubility, it may be a means to reduce permeation.

New producers of polyethylene are presently entering the field and there is a strong likelihood that their efforts will lead to variations from the plastic as we know it now. They may be working with greater cross linkage, with polar substituents, and with increased crystallinity, all of which would alter the permeation characteristics.

We feel that here are the directions for further research. The polyethylene container has far too many advantages to be left with its present handicaps. Let us bend our efforts to improving polyethylene for our products and stop this fruitless search for ways to make our products polyethylene proof.

As soon as the producers of polyethylene containers can overcome the existing weaknesses, the fragrance and food industries will consume many, many times the millions of polyethylene containers now produced. Certainly, it is a very attractive goal and worth considerable research by the container manufacturer and plastic producer.

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Glycerine Properties in Cosmetics

(*Continued from page 773*)

Viscosity

A series of vanishing creams which differed in the kind and amount of polyol was used to determine the effect of the polyol upon the viscosity or stiffness of the cream. The composition of the creams is given in Formula No. 2 on Page 855.

The polyols glycerine (95 per cent concentration), sorbitol (Arlex, 84 per cent concentration) and propylene glycol (99+ per cent concentration) were calculated on the anhydrous basis and allowance made for the water in them. They were used in amounts of 2.5, 5.0, 7.5, 10.0, 12.5, 15.0 and 20.0 per cent by weight of the total formula and a weight of water equal to the weight of

FORMULA No. 2. VANISHING CREAM

Ingredients	Per Cent by Weight							
Stearic acid	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Potassium hydroxide	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Polyol	0.0	2.5	5.0	7.5	10.0	12.5	15.0	20.0
Isopropyl palmitate	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Water	82.0	79.5	77.0	74.5	72.0	69.5	67.0	62.0

polyol added subtracted from the amount of water in the base formula. The creams were prepared in the following manner:

1. Melt the stearic acid and isopropyl palmitate together and heat to 85° C.
2. Heat the water, alkali and polyol to 85° C.
3. Add the water solution to the fats, slowly and with constant stirring.
4. Mix the cream slowly by hand while it cools.
5. Let it stand overnight.
6. Rework the cream until it becomes soft, then fill into jars while cold.

The samples were graded for viscosity by inspection. It was found that, as the amount of polyol was increased, the viscosity of the cream increased up to a certain point, then decreased. The concentrations of polyol to give maximum stiffness were: glycerine 7.5 per cent, sorbitol 15.0 per cent and propylene glycol (which gave two maxima) 10.0 and 20.0 per cent. A repetition of the experiment gave the same results.

A similar experiment was made with a hand lotion of the composition given in Formula No. 3.

FORMULA No. 3. HAND LOTION

Ingredients	Per Cent by Weight				
Glycerine mono stearate	3.55	3.55	3.55	3.55	3.55
Stearic acid	0.66	0.66	0.66	0.66	0.66
Oleic acid	0.66	0.66	0.66	0.66	0.66
Lanolin	0.66	0.66	0.66	0.66	0.66
Mineral oil	4.40	4.40	4.40	4.40	4.40
Triethanolamine	0.44	0.44	0.44	0.44	0.44
Polyol	0.00	3.30	6.70	10.00	13.30
Water	89.63	86.33	82.93	79.63	76.33

The lotion was prepared in the following manner:

1. Melt and heat to 90° C. all of the fatty materials plus 50 parts of the water.
2. Mix and heat to 90° C. the remainder of the water, the triethanolamine and the polyol.
3. Add (2) slowly to (1) while stirring. When cool, set aside overnight. Stir briefly, strain and place in bottles.

In these lotions no maxima of viscosity were found. Instead viscosity increased steadily with increasing polyol content.

Summary

The hygroscopicity of materials such as glycerine can be rapidly and quantitatively measured by noting

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the weight change of the material spread in a thin film on the fibers of glass cloth when exposed first to atmosphere of one relative humidity, then to another.

Vanishing creams prepared using equal amounts of glycerine, of sorbitol, and of propylene glycol were found to lose moisture at substantially the same rate when exposed in uncovered jars. All were markedly better in moisture retention than a corresponding cream made without any hygroscopic agent.

The effect of a polyol upon the viscosity of cosmetic preparations is not always proportional to the amount of polyol added. In a vanishing cream it was found that viscosity increased to a maximum with increasing content of polyol, then decreased with further increase in polyol content.

Reference

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Patent Thoughts and Trends

(*Continued from page 829*)

Tests have been made with the present antigen through the medium of the complement fixation testing system using guinea pig serum. As is commonly known, this serum is one of the reagents used in this type of test to aid in the detection of syphilis in a patient's sera. Any antigen which reacts with the guinea pig (complement) sera will give a tendency towards false reactions when employed in routine tests on human sera and spinal fluids. In the following table are given results of complement fixation tests for syphilis on a group of 27 guinea pigs tested with the yeast antigen of this invention as compared to four other well-known antigens. The guinea pig numbers that are missing represent those which were negative with all antigens:

SPECIFICITY COMPARISON

Guinea Pig No.	Antigen N. Y.	Harris	Kol.	Kahn 162	Yeast
3	—	—	85	95	—
4	—	—	99+	95	—
6	—	—	99+	97	—
7	—	—	99	95	—
8	—	—	00	70	—
10	—	00	70	70	—
11	90	95	00	40	—
12	99+	80	30	40	—
13	—	—	90	80	—
14	—	—	95	90	—
15	—	—	70	60	—
16	—	—	85	80	—
17	00	00	70	50	99
18	—	—	60	80	—
19	—	—	95	90	—
20	—	—	00	50	—
21	—	—	99	95	—
22	—	—	99	95	—
23	60	00	00	00	50
25	—	—	80	92	—
26	—	—	80	80	—
27	—	—	97	99	—

Note.—The N. Y. and Harris antigens are cardiolipin antigens. The "Kol." represents the Kolmer complement fixation antigen. The Kahn 162 antigen is the Kahn flocculation test antigen titrated for use in the complement fixation tests. All antigens were used at optimal dilution under identical conditions. The number and symbols represent degrees of hemolysis from zero (00 to 40, 50, 60, 70, et cetera) to (—) complete, representing highly positive (00) to weaker positive (40, 50, 60, et cetera) to negative (—) respectively.

Crystalline Beta-Ionone

The preparation of crystalline beta-ionone, the versatile material which bridges both the drug and cosmetic fields, was the subject of an invention made by Thomas G. Drustrup, who assigned his patent (U.S. 2,638,483) to Charles Pfizer & Co.

Drustrup points out in his patent that since beta-ionone is an intermediate in the synthesis of vitamin A the purer the beta-ionone the better the resulting vitamin A product.

Drustrup states that the most feasible process for initially obtaining beta-ionone, namely, the acid cyclization of psuedo-ionone, yields a product having as low as only 70 per cent beta-ionone, contaminated with unreacted pseudo-ionone and with alpha-ionone. Purification procedures are difficult.

The way out of the problem, according to Drustrup, is the simple expedient of dissolving the cyclization product in an organic solvent, lowering the temperature of the solution to at least about $-35°$ C, and selectively crystallizing beta-ionone from the solution.

The solvents which may be used in the Drustrup process include aliphatic or cycloaliphatic hydrocarbons, such as pentane, hexane, low boiling (20° to 100° C.) petroleum fractions, and methylcyclohexane; lower alkanols (having from one to about four carbon atoms) like methanol, ethanol, and isopropanol; lower alkanones such as acetone and methylethyl ketone; and lower alkyl ethers like diethyl ether.

An example of illustrating the patented process is given below, verbatim from the patent:

Crude β-ionone (436 grams), having a β-ionone content of 81 per cent as determined by spectrophotometric analysis, containing a total of 94.5 per cent of ketones and having a refractive index of $n_D^{20} = 1.5178$, was added to 800 milliliters of a commercially available, low boiling (28-38° C.) petroleum fraction known in the trade as Skelly-solve A. The mixture was stirred in a glass flask and cooled in a Dry Ice-acetone bath to a temperature of about $-70°$ C. in a period of approximately 30 minutes. Seeds of β-ionone, which were obtained from a previous batch in the same manner, were added from a Dry Ice-cooled tube. The mixture was stirred for 5 hours to complete crystallization and then stored overnight at $-70°$ C. A glass tube having a frittered glass disk at its lower end was inserted into the liquid. The upper end of the tube was attached to a flask equipped for evacuation, and the latter was subjected to a vacuum, drawing the liquid from the crystallization vessel. After as much of the mother liquor had been thus withdrawn as was possible, 500 milliliters of Skelly-solve A, which had been precooled to $-70°$ C. was added to the flask. The crystals were stirred with the fresh solvent for a short time and this wash liquid was withdrawn in the same manner as previously. The crystalline β-ionone was then allowed to melt (at about $-35°$ C.) by removing the flask from the cooling bath. After the mixture had reached room temperature, vacuum was applied so that the remaining traces of

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solvent were evaporated off. The residual material consisted of a pale yellow oil, weighing 316 grams and assaying 96 per cent pure β-ionone by the spectrophotometric method. The refractive index of this product was $n_D^{20} = 1.5193$. Of the original β-ionone content of the crude material, 86 per cent was recovered as purified product.

It was found that this material was particularly suitable for condensation with ethyl chloroacetate in the next step of the vitamin A synthesis. However, when the crude β-ionone starting material was utilized for condensation with ethyl chloroacetate, a low yield of very poor quality "C_{14} aldehyde" was obtained.

(To be continued)

RECENT PATENTS

2,634,274—**G. D. Searle & Co.—Basically Substituted N-Alkyl Derivatives of Alpha, Alpha-Ditolylpropionamide.**

2,634,275—**Winthrop-Stearns Inc.—4-Acylamino-1-Alkyl-4-Phenylpiperidines.**

2,634,277—**Merck & Co., Inc.—Hydrolysis of 21-Acyloxypregnenes.**

2,634,292—**Hoffmann-La Roche Inc.—Cyclohexenyl Ethyl Amine.**

2,635,079—**E. F. Drew & Co.—Antifoam Material.**

2,635,096—**Eli Lilly and Company—Dicyclohexylsulfamate of Streptomycin**

2,635,101—**G. D. Searle & Co.—6-Thia-5,6,7,8-Tetrahydro-4-Quinazolinol Derivatives Substituted in the 2-Position.**

Cosmetic Elegance

(*Continued from page 769*)

such agency should not interfere with its primary functional purpose which is too clear. A great advantage here is the ability to form a small closely packed bubble which imparts a velvet-like "feeling" during the shampooing operation.

Development of unpleasant odors on standing is a problem which must be fought continuously. The best guard against such development is to be sure that the materials used are free from odor to begin with. In addition the finished material should be checked to assume a constant pH on standing, since changes in the amount of alkalinity or acidity could easily release some odoriferous substances not volatile at the original pH. A further check should be made against any possible inactivation of some of the perfume components due to the introduction of substances with which they are incompatible. I sometimes think that the introduction of a greater scientific control to the cosmetic manufacturer has also lessened the emphasis on odor. There is no doubt that the increase in technical advances has been of great value in making possible some of the newer preparations that are so readily accepted, but a woman's habits have not changed a great deal and she still is inclined to smell the cosmetic preparation before she examines it further.

It should also be remembered that in application

the preparation is placed in the palm of the hand and then spread between the two palms before application to other parts of the body. Such treatment also would make unwanted odors more apparent than they would otherwise be. A rigid test for odor would be to duplicate the application procedure and smelling after rubbing between the palms. A change in pH could effect the odor since the product would undergo such a change due to the pH of the skin film and unless odors not apparent when looked for in the container.

Treatment of a topic such as Cosmetic Elegance must of necessity be rather hazy, since ideas on elegance do not necessarily agree. I have purposely avoided any discussion of greasiness versus a "luxuriant" oil film, since the ideas representing both these terms sometimes are interchangeable. I do not believe that any one oil concentration or thickness of applied film would please all women. This fact is interesting because the differences from product to product are capable of fitting the desired needs of different segments of the purchasing public.

Many Million Dollars More for the Drug Industry

(*Continued from page 759*)

in the service he can render in such things as Nutrition (Dieting) and Animal and Plant Health.

There is danger that too few in this industry will clearly and properly appraise these three markets as to dollar potential and even more important as to rapid and excited growth. These markets are not being ignored by others, they will not fall to this trade by default.

This industry has the head start, they have the technique in research, they should have the distribution—that is, informed retail help. They need the time and they need the money.

If the drug industry can find the time and the money to assert and prove leadership in Nutrition, in Animal Health and in Plant Health as well as retain its expanding vigor in Human health, then mark the Drug Industry as one to watch for dynamic growth.

Up To Date on Vitamin A

(*Continued from page 763*)

deterioration when exposed to the air at elevated temperatures for 1,200 hours. This is about the equivalent of storage for three years under normal conditions.[10] In addition to greatly increased stability, the dry, free-flowing granular product offers certain other advantages. These include more efficient absorption of the vitamin in the body, ready incorporation in a variety of pharmaceutical preparations, especially multivitamin formulations, and simplification of food and feed fortification with vitamin A.[11]

Of a similar nature is the process developed by Bogin.[12] In his procedure, which appears to be especially suitable for use with natural vitamin A from fish liver oils, the final product is in the form of free-flowing granules in which the vitamin oil is finely dispersed as

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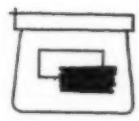

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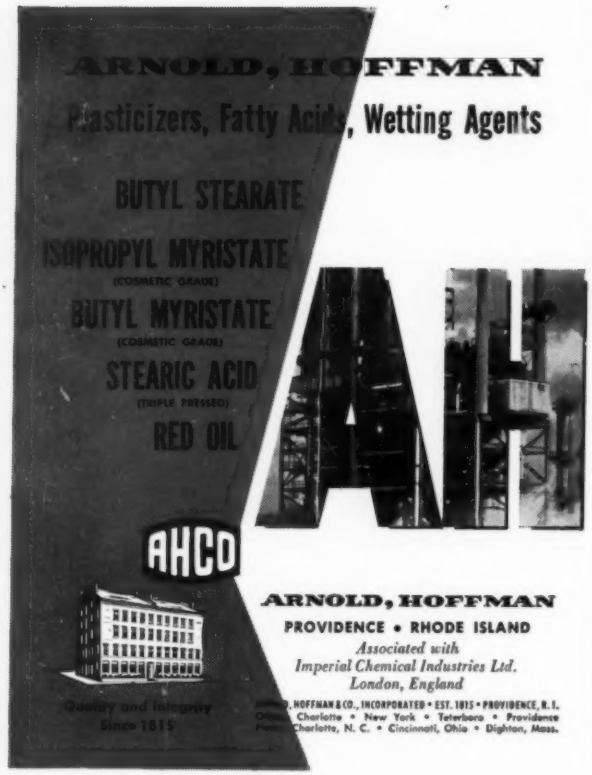

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As is well known, the resistance of vitamin A to oxidation depends to a large extent on the presence of antioxidants. In addition to those naturally present, the addition of a supplementary amount of antioxidants is also possible. Antioxidants suitable for stabilizing vitamin A include alpha-tocopherol (vitamin E), nordihydroguaiaretic acid (NDGA), ional, and hydroquinonecitric acid mixtures.[13] In view of the growing use of aqueous vitamin A products, it is interesting that tocopherol offers slightly better protection to the aqueous preparations than does NDGA.[14]

It is recognized that vitamin A is required to maintain the structure and function of certain of the special epithelial and glandular tissues, the growth of the body, and the visual functions of the retina. Vitamin A plays an important role in the mechanism by which the vision is adapted to dim light (e.g. dark adaptation). Hence, considerable biochemical studies relating to vitamin A have been directed to the visual process.

As explained by Youmans,[15] the adaption of vision to dim light, principally a function of the retinal rods, requires an adequate supply of vitamin A. This process depends on the presence of an adequate amount of visual purple, or rhodopsin. Vitamin A with a protein forms this visual purple. Rhodopsin is reversibly broken down in bright light to retinene, which in turn is reconverted to vitamin A. This continuous process of breakdown and regeneration is associated with some loss of vitamin A; requiring a supply for replacement. Without an adequate supply of vitamin A, there is a failure in the formation of visual purple and poor dark adaptation, or night blindness, results.

Early in 1952, in an indicative series of *in vitro* experiments, Hubbard and Wald[16] observed that only cis-isomers of vitamin A were utilized in the production of rhodopsin, or visual purple. Aside from its importance as a basic biochemical study, much of the interest in this work stems from the fact that fish liver oils, which contain mixtures of cis- and trans-isomers, were effective in producing rhodopsin, while crystalline vitamin A, which consists of all trans-isomers, was not capable of producing visual purple.

To some people, this suggested that there might be a difference in effectiveness between the crystalline synthetic product and natural vitamin A from fish liver oils. A check of the report itself, however indicates that this was not implied by Hubbard and Wald, who stated that, "It is probably not necessary to feed the active isomer to make it available in vision, for vitamin A apparently isomerizes in the body." They also cited the work of Robeson and Baxter[17] who found that mix-

tures of both isomers of vitamin A were deposited in the liver after crystalline vitamin A was fed to rats.

Also noteworthy in this connection is the observation made by Krehl[18] in a very comprehensive review on the role of vitamin A in the visual process. This authority pointed out that there is an "easy interconversion" between the isomers of vitamin A. Similarly, after a review of the Hubbard and Wald report, and other pertinent data, Siemers[19] stated that "Investigations in the living animal demonstrate unquestionably that the all-trans form, whether from natural or synthetic sources, is converted in the animal body to the other forms and there is no present reason for doubting that it can fulfill all the vitamin A needs of the animal."

Night blindness may follow, of course, from vitamin A deficiency. Indeed, such a deficiency, which may be due to inadequate intake or faulty absorption, may result in a number of developmental or metabolic defects. Bourne's[20] list of such defects includes: (a) Failure to gain weight, (b) dryness of the skin and hyperperatosis with atrophy of the cutaneous glands, (c) xerophthalmia and inflammatory eye conditions, (d) cornification of the epithelial surfaces of various mucosae, (e) nyctalopia or night blindness, (f) maldevelopment of certain bones, (g) degenerative changes in the nervous system, and (h) susceptibility to infection. In Bourne's opinion, there is no question that vitamin A deficiencies also play important roles in the reproductive functions. Among the most common symptoms of avitaminosis A are retarded genital development, sterility, weak or poorly developed young, and faulty lactation.

During the last few years research workers have assembled considerable new information on the factors that influence vitamin A absorption. For example, in a study on 18 men and seven women, Week and Sevigne[21] found that vitamin A absorption is influenced both by sex and by the chemical form of the compound. The subjects were given 134,000 micrograms of vitamin A in margarine at breakfast in the form of the alcohol, the acetate, or as one of two natural esters. Blood samples were drawn before administration of the vitamin and after 2, 4, 5, 6, 8 and 24 hours. In the men, the serum level of vitamin A was highest at all intervals after they had consumed the vitamin A alcohol, next after the acetate and somewhat lower after the natural esters. A given dose of the vitamin gave uniformly lower serum levels in the women; here again the acetate was lower than the alcohol form, but, in contrast to results in the men, the natural esters showed as high a serum level as the alcohol form. In all cases, the vitamin A was present in the serum in the ester form irrespective of the form administered. Although, in this clinical study, the differences in effectiveness between the various forms of vitamin A were statistically significant, they were all well utilized and, from a practical viewpoint, the differences were not great.

These workers[22] have also determined the effect of various diluting agents, such as ethyl laurate, corn oil and mineral oil, on the utilization of the various forms of vitamin A by the rats. The use of ethyl laurate as a

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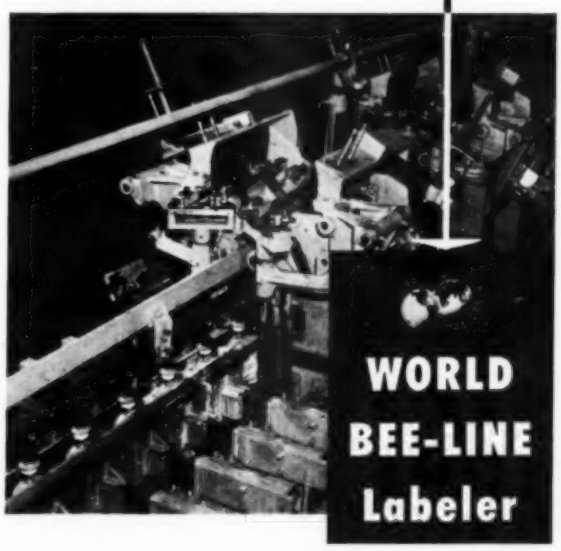

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diluting agent resulted in poor utilization of both vitamin A alcohol and its esters. Mineral oil reduced the utilization of vitamin A esters more than the free alcohol. Corn oil, however, afforded the best utilization and storage of the various forms of the vitamin.

The effect of mineral oil dosage on vitamin A absorption has been studied clinically by Steigmann and his associates.[23] In a series of control studies using diets containing various quantities of vitamin A activity, they found that the average vitamin A plasma levels tended to remain the same over three- to four-week periods in persons receiving 2,500 units daily. Because of the relative constancy obtained with this intake, it was decided to study the effects of various dose schedules of mineral oil on plasma vitamin A concentration in patients receiving 2,500 units. The results indicate that 2.5 cc. of mineral oil mixed with each of the three meals represents an approximate threshold dosage below which no effect on vitamin A absorption is observable.

Further studies on the absorption of vitamin A have confirmed earlier studies and provided additional information. Thus, in view of the growing physiologic importance of the aqueous preparations, Kern and Antoshkiw[24] compared the absorption of the vitamin from aqueous and oily media. They found that the absorption of vitamin A from aqueous media, as measured by vitamin A tolerances in humans, was better than that obtained with the same vitamin A diluted in oil.

In a continuation of earlier studies, Lewis and Cohlan[25] provided further data on the greater absorption, higher liver storage and lower fecal excretion of vitamin A in aqueous media as compared with vitamin A in oil. Their investigations showed that aqueous vitamin A produces distinctly higher blood concentrations than vitamin A in oil or emulsion in premature infants, normal infants, children and adults, and produces even more striking differences in cases of impaired absorption due to celiac disease, cystic fibrosis of the pancreas, and obstructive jaundice. Smaller vitamin A losses through fecal excretion and higher liver storage after aqueous vitamin A administration substantiated the view that the higher vitamin A concentrations in the blood actually represents greater absorption rather than a temporary unrelated blood rise.

Continued studies by Sobel, Rosenberg and Kramer[26] have also provided additional information on the absorption of the vitamin. In their studies, the vitamin A content of the milk and blood of human mothers was determined periodically after the administration of the nutrient in aqueous and oily media. The vitamin A content of the milk underwent considerable rise within 12 hours after the administration of the aqueous preparation. In contrast, the vitamin A content of the milk did not undergo a significant rise during the first 24 hours following the administration of the same vitamin A in oily solution. An explanation of this difference is offered by the higher blood levels obtained with the aqueous dispersion; indicating improved absorption.

These investigators believe that the improved transfer to milk with aqueous dispersions is probably not limited to vitamin A. The other fat-soluble vitamins, D, E and K, should behave in the same manner.

A clearer understanding of the mechanism of vitamin A absorption was provided in the more recent report of Luther and his colleagues.[27] Their studies indicate that there is a definite relationship between the particle size of a vitamin A preparation and its biological availability. In this work, rats were fed the U.S.P. Reference Standard for vitamin A (a solution of purified vitamin A acetate crystals in cottonseed oil) and the amount of the vitamin recovered from their livers was given a basic value of 100. With this value as a basis of comparison, it was observed that a particle size of 20 to 30 microns as found in oily preparations (e.g., natural fish liver oil and U.S.P. reference standard) gave values of 100 to 103. Particle sizes of 5 to 8 microns as present in vitamin A emulsions, such as cod liver oil emulsion, gave values of 135 to 144. However, particle sizes of 0.5 to 1.0 micron, as found in aqueous dispersions and as provided in the preparation of synthetic crystalline vitamin A acetate in a gelatin matrix (as cited above) gave liver recovery values ranging from 168 to 178. This, of course, points to a 68 per cent greater biologic availability from the finely divided preparations, as compared to oily products, including the U.S.P. Reference Standard.

Foreign work suggests that under certain circumstances it may be feasible to administer vitamin A by rectum. In view of the blood levels obtained via this route in 10 children, Barilla and Peruzzi[28] consider this method very useful for providing quick absorption and therapeutically sufficient drug levels.

Just as vitamin A deficiency may cause various symptoms, so vitamin A in excessive amounts may produce certain undesired effects of its own.[29] These are described in the recent medical literature which carries several additional reports[30-33] (generally of individual cases) of hypervitaminosis A in children. As noted by Gribetz, Silverman and Sobel,[34] the symptoms may resemble those of several other disorders and the diagnosis is confirmed by a knowledge of an excessive vitamin A intake and the findings of a high plasma vitamin A level.

The child with this condition is usually brought to the physician because of irritability, anorexia, loss of hair, pruritus, disturbances in gait, and painful soft tissue swellings. X-rays show thick cortex of the long bones, particularly the ulnae, which is responsible for the tenderness of the extremities. The liver may be enlarged. Fortunately, the symptoms disappear rapidly when vitamin A administration is discontinued.

The observations of a number of workers appear to show that infants may tolerate daily doses of about 250,000 international units of vitamin A for a year or more without the development of symptoms, but that they may not tolerate doses of 500,000 units for even short periods of time. This would indicate that, on the basis of body weight, the toxic daily dose of vitamin A

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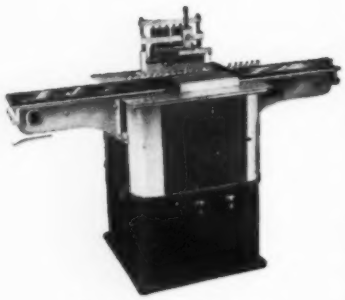

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for an adult would lie between 1,500,000 to 3,000,000 units daily.[35]

The high doses required to produce hypervitaminosis A help to explain why it is a comparatively rare condition. Nonetheless, with the public becoming more vitamin conscious and with the availability of highly concentrated preparations, there is a danger that this disorder may occur more frequently. Particularly important is the need for caution and a clearer understanding of vitamin A forms and dosages among those concerned with the nutrition of infants and children.[29]

The importance of vitamin A in the nutrition of infants and growing children is so well known as to require no comment in this discussion. However, with the steadily increasing proportion of older persons in the population, there is growing interest in the status of the vitamin during the declining years. For example, Rafsky and Newman[36] have observed that a state of "biochemical avitaminosis" exists in apparently normal elderly people. This may be defined as laboratory evidence of deficiency disease without clinical signs or symptoms of it. In their studies on 38 apparently normal aged persons, they found subnormal levels of vitamin A or carotene or thiamine or ascorgic acid in the majority of the subjects. Their data with respect to vitamin A showed that 16 of the 38 patients had blood levels that were below normal.

However, clinical symptoms of vitamin A deficiency in the aged have been reported. Kirk and Chieffi[37] found that ocular and dermatologic lesions attributable to hypovitaminosis A may develop in aged persons receiving 10,000 units of the vitamin daily in the food. Daily oral administration of 30,000 units as a dispersion of the natural vitamin A acetate resulted in an increase in plasma concentrations in the 23 patients under study. With this intake, localized conjunctival thickening, blepharoconjunctivitis, and follicular hyperkeratosis were slowly, but definitely benefited.

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(*To be concluded*)

T.G.A. Meeting

(*Continued from page 760*)

That's not the fact, though, and if it were, we would no doubt have other inquiries to face as to how our companies all arrived at similar non-competitive arrangements. The FTC has a recognizably big job to complete in its review of the various plans. When this has been done, we can expect prompt and effective enforcement so that unfair advantage will not be realized by those few companies who might seek to improve their competitive positions through a total disregard of the rules. We should very definitely receive dealer cooperation in our efforts to maintain proper legal plans, as any violations that are either induced or taken advantage of by retailers could result in a joint action against the manufacturer and the retail outlet. All of us should fervently hope that our days and years of extended 'proportionately equal' litigation before the Federal Trade Commission are of the past; a certain reasonableness on the part of the FTC, an effort to comply by the manufacturers, and a realistic acceptance of the Robinson-Patman Act by the stores will make it so.

"A more recent development is the FTC 'non-smear' and "indelible" lipstick advertising investigations. There are manufacturers here who run the gamut from conservatism to sensationalism in their advertising methods. Which approach to the customer's dollar is best is hard to say, but to keep us within reasonable factual limits appears to be the aim of the FTC. It's not within the province of our association to adopt any attitude on controversial matters and with respect to the veracity of the advertising claims of any industry members, we cannot pass judgment. This does not mean, however, that ostrich-like we should disregard the existence of a problem. The FTC is empowered to prevent certain types of false and misleading advertising and it is in the best interests of industry as well as the public that this is so. Although we should not allow burdensome, unnecessary restrictions to be imposed on advertising that is true and factual, regardless of how sensational or striking it might be, it still behooves us not to step over the line. Any attention fastened on an industry member reflects to the discredit of us all and makes that second billion dollars just that much farther away. A rule of reasonableness is what we should expect from the FTC and each manufacturer alike. Advertising that might be true of one product could well be untrue of another. If we back our products by research and our advertising by facts, there is nothing to fear. On the other hand, though, we must avoid competitive campaigns of un-

RESEARCH DIRECTOR

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Prefer man under 45 with PhD in organic chemistry or chemical engineering. Prefer experience in fine organics, pharmaceuticals and toiletries as these are our fields of interest.

Must be competent administrator who is an aggressive, imaginative, practical scientist.

Send resume outlining education, experience, salary requirements.

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Perfume Base

$7.50 per lb.

An exclusive, new perfume base with the charm and fragrance that will add distinctive character and unequalled richness to your product.

Write today on your company letterhead for free sample and full information.

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PRIVATE FORMULA
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Skilled Factory Employees
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Two Ertel units that make small production efficient. They have all the desirable features of Ertel high production equipment: EFS-B FILTER has single hand wheel for simple trouble-free operation, bronze or stainless circulatory system, accomodates accepted Ertel Asbestos Filter Sheets. PORTABLE FILLER has automatic overflow system, non-drip spouts, bottle size flexibility up to gallons. And, both units can be easily moved from place to place. Write for detailed information on this important equipment... it belongs in your plant.

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truths or great exaggerations. It is the duty of all of us to cooperate to this end. Actually, of course, it's more than lipstick that concerns the FTC and unless we advertise each of our products truthfully, we'll be in trouble. This can even come from the general public and affect us even more directly and seriously than FTC litigation, because a continuation of bad, untruthful or exaggerated advertising will affect our consumers' faith in our products, thus also jeopardizing our sales and profits."

A year has passed since the McGuire Act was enacted. This legislation, as we all know, was supposed to effectively reinstate fair trade or resale price maintenance, as it is sometimes called. The issue of whether manufacturers can find workable legal methods of fixing retail prices at which their products must be sold has had its ups and downs since 1937, but in the last few years in particular, we have seen major problems in this field. Even with the McGuire bill the battle has not been won completely as continuing attacks are being made on fair trade in the courts of almost every state. Some of the efforts to destroy the effectiveness of fair trade have been successful and we should watch this problem carefully. With any slight decrease of the fairly favorable economic tempo the ranks of those who attack fair trade swell. As manufacturers we know the losses and problems caused by price wars affecting our products and the value of our trade-marks. Vigilance is necessary and will benefit both manufacturer and retailer.

A recent interesting development has been the Defense Department recognition of the need for the cooperation of our industry in connection with the educational program designed for women in the Armed Forces. In order to help the recruiting program and the morale of the women who have joined the Armed Forces, a plan is being formulated which involves continuing education on good grooming and the proper use of cleansing and beautifying aids. One of the biggest selling points in recruiting women is the fact that they will receive a broad education as a member of the army and it was with this thought in mind that the Defense Department felt that our organization could join in the program. Naturally this is not work that should properly be done by one individual firm and it is something that can be quite advantageously coordinated by the T.G.A.

Through the support of the T.G.A. and with the cooperation of the Public Relations Co-ordinator of the Defense Advisory Committee, a travelling representative will be employed who will spend her time at the five recruiting centers educating the incoming classes in the general principles of good grooming and the use of cosmetics and toiletries. Part of the expense will be taken care of by the government; however, we will sponsor this representative and pay certain of the other necessary expenses as well as assume her salary. This program is not only a worthwile patriotic gesture on our part but also will contribute to the over-all educational program that we are anxious to put into effect.

Here again T.G.A. is undertaking another very constructive activity that will benefit our industry in many ways. Of course, the women of the Armed Forces will carry their newly acquired knowledge of good grooming back with them into civilian life. Even more important is the recognition by a branch of the Government that our industry is necessary and essential even to the Armed Forces.

"Last year and continuing into this year with no prospects of any immediate settlement is the situation with respect to the Trade Practice Rules," said S. L. Mayham, executive vice-president of the association. These rules were issued in February, 1952 and more than a year has now gone by. While every effort has been made on the part of the producers of cosmetics, and especially those who are members of the T.G.A., to comply fully with the requirements of the rules, no one at this time will seriously contend that the rules are completely in effect or that all irregular situations have been eliminated. The Trade Commission has called upon us for counsel and advice on many occasions. It has contemplated for several months the possibility of enforcement actions in the way of citation of companies which, in the opinion of the Commission have (a) ignored the rules altogether or (b) developed plans which are considerably out of line with some of the requirements of the rules. Consideration has been given by the Commission to join in these cases some recalcitrant retailers who have desired to continue to receive allowances not in accordance with the manufacturers' regular plans and who have at the same time insisted that such allowances be given although they were clearly illegal. No suits have as yet been brought but there is a probability that some actions will be undertaken by the Commission. The reason, I understand, that no suits have been brought thus far is the fact that the new Administration, with vacancies to fill on the Commission, delayed for some time filling such vacancies. Meanwhile, the staff of the Commission, not knowing what attitude the new Commissioners might have, has hesitated to take any action which might be in conflict with any new policies which the new Commissioners might adopt. It is not only possible but quite probable that enforcement action on the part of the Commission will be instigated at an early date. This is an unfortunate development for, in the opinion of the Association, its members are in no way to blame, the fault lying clearly at the door of certain retailers and of the Commission which has been quite reluctant to proceed against retailers no matter how far in violation of the law such retailers might be.

"The Commission has also looked most sharply at the industry's advertising. Unfortunately in the case of the advertising of some members of the industry a long look has certainly been warranted. After the passage of the Miller-Tydings Act and the revision of the Federal Food, Drug and Cosmetic Act to include cosmetics, there was a period of several years during which a considerable improvement in the case of industry labeling and advertising took place. Misleading

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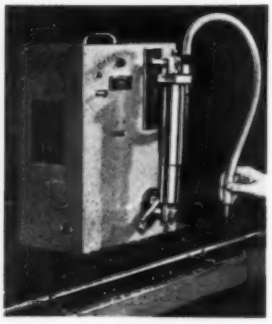

FILAMATIC easily synchronized with your present conveyor. Has micro accuracy averaging 1/10 of 1%. Delivers foam-free—even soapy liquids. Eliminates waste of liquids. Simple to use, clean, sterilize. Request Bulletin C-5

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and exaggerated claims were discarded by many companies and a more factual and mature type of advertising began to be prevalent over the entire cosmetic industry. Unfortunately the pressure of competition and especially competition by newcomers to the industry with strong promotional tendencies have during the past two or three years changed this course of steady improvement to one of rapid deterioration. The advertising in the industry is by no means as clean and as sound and as constructive as it was two or three years ago. In self-defense members of the industry have had to change the character of their advertising to meet serious competition from unscrupulous newcomers in the field. There is a considerable amount of bad advertising which is most unfortunate because bad advertising can produce very serious results. The first of these is action by the Federal Trade Commission. This is by far the least serious effect of bad advertising. Far worse is the effect upon the psychology of the purchasing public with respect to cosmetic advertising. If a product claims far more than can reasonably be delivered or does it in flamboyant fashion there is no question that the product will be sold. It can be sold once, provided the advertising is sufficiently powerful. However, if the consumer purchasing the product finds out that it will not do the things which the advertising claimed for it, she will certainly not repeat the purchase. In addition, she will probably tell everyone with whom she comes in contact, 'Don't buy that product, it won't do what they claim for it.' What this does to repeat business is obvious. Less obvious is its effect upon the fine confidence which the American public has had in the advertising of all industries including cosmetics and toilet preparations. Anything that destroys that fine confidence seriously damages industry and the public.

"Examples of advertising which have already brought the Federal Trade Commission into the picture are numerous. The most recent is lipstick advertising which led to a definite policy statement on the part of the Commission with respect to claims for lipsticks. An investigation has also been carried on with respect to products including cosmetics covering claims based on chlorophyll content. Other preparations of the industry may also expect investigations and possibly citations and cases. As these expand to cover more and more segments of the industry we are likely to find ourselves seriously restricted in the claims which we may make and our business will suffer accordingly. This is a situation in which every manufacturer should be concerned. It is to be hoped that the industry itself will once again pursue a more truthful and less exaggerated type of advertising."

"One point which has never been on the agenda of any toilet goods convention or at any of the meetings of The Toilet Goods Association is the question which has now become important not only in this field but in the drug field," said Hugo Mock, general counsel of the association. "This question is—Is there excessive product duplication?

"This brings to light the further question—When does the duplication of the new products of a toilet goods manufacturer leave the realm of fair competition and become unfair competition? Is it fair or not to duplicate immediately a new product of a pioneer manufacturer without giving said pioneer a chance to exclusively promote the item in his outlets?

"This is not an academic question because if there is excessive duplication of products, it concerns not only the manufacturer himself but also the wholesaler and retailer. An unnecessary multiplication of products or an undue number of shades of a given product presents a problem not only for the manufacturer but for the retailer who is compelled to stock all of these items.

"Perhaps this is not a problem for the giants of the industry who are prepared to launch nationwide selling and advertising campaigns at one time but unless the question is discussed freely, there is likely to be a multiplicity of competing products unwelcome to the retailer, and indeed the consumer himself may be confused. Would there not be a gain to the public and to the industry itself if there was something like a cooling off period in which the manufacturer launching a new product had the market to himself for a temporary period of time?

"We are aware that unlimited competition and free enterprise is called the bed rock of the American system. On the other hand, from the economic angle, it is an economic waste if numbers of manufacturers immediately copy an existing article which is merely a duplicate of something already on the market.

Burden on Retailer

"Naturally there cannot be any legal division of the market in any article, and any agreement not to compete in any given field for any specific period of time would be a violation of the anti-trust laws. On the other hand, the number of items already carried by the average retail druggist is staggering and unduly increases the costs of manufacture and distribution. The subject is one worthy of discussion because unless this situation is confronted and in some fashion solved, it means further losses in the industry.

"The same tendency may appear in time in the cosmetic industry as has already manifested itself in other industries. There used to be 200 manufacturers of motor cars in this country and now there are not over ten important ones. In 1935, shortly after prohibition, there were hundreds of liquor manufacturers and wholesalers having national distribution. Now there are only about one dozen of such liquor organizations and with the increase in production and advertising costs, the same irresistible tendency may afflict the toilet preparations industry. Is the small manufacturer and the small retailer worth saving or will ultimately only the big advertisers be the sole survivors?"

"For a cosmetic company to stay healthy and progressive it must have a research program," said H. D. Goulden, scientific director of the association. "It is quite true that obsolescence, as it is known in other

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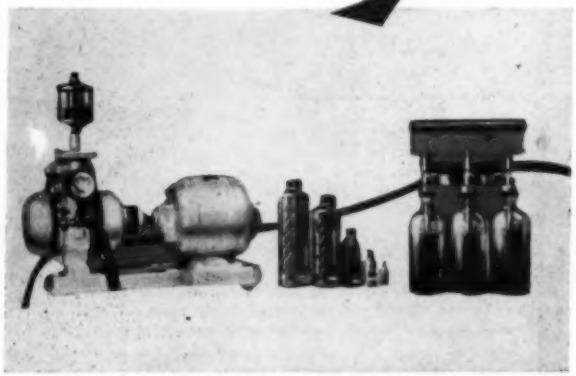
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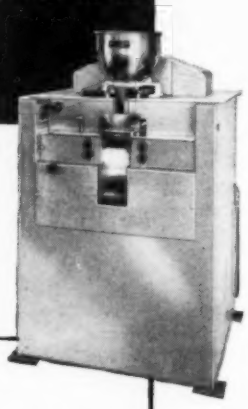

A Form and Fill Machine at a remarkably LOW COST

Any quantity of your dry, free-flowing products, from a few grams up to ½ ounce, can now be heat-seal packeted at remarkably low cost with the new Brown Bag Formapak Machine. Operating speeds from 40 to 100 per minute. Packets from 2" x 2½" to a maximum of 4½" x 4½". Accurate controls of both temperature and pressure insure a strong seal, broken only by tearing the fibers. Will take other filling heads for products not entirely free-flowing or somewhat sluggish.

Write for complete details.

Occupies 3' x 3', over-all height 5'2".

Representative: Kruse Packaging Machinery, 5807 West North Avenue, Chicago 39, Illinois.

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FITCHBURG, MASS.
U. S. A.

industries, is of an entirely different order of magnitude in this industry; however, it does occur and the only answer is research.

"Research, to be effective, must be properly financed and above all it must be continued in bad as well as good times. The continuity of research is all important. Too often when times get tough, economies are effected by markedly reducing the research personnel. When times are bad is the time when your research department is most needed.

"When you set up your research budget don't neglect to set aside, if it is at all possible to do so, a portion of your budget for fundamental research, as distinguished from development research, for it is on this cornerstone that future advances in science are built.

"It is true that some of the rather important contributions to science have been accidental; however, it is equally true that most of them have not been a matter of chance but rather the result of a carefully developed deliberate search. The setting of goals to be attained by research is a difficult and serious matter and some believe that this should not be left entirely to the research director. A group composed of top management, sales, manufacturing and research make a combination that should be extremely effective in setting goals. This group should be kept as small as possible for effective functioning.

"A research department is only as good as the ability of those who manage it and those who staff it. They must be selected with care and given the proper 'climate' in which to flourish. Give them support and a reasonable period of time and they can usually be counted on to come up with the answer and merit your continued support and enthusiasm.

"Before concluding these few observations on research, may I suggest to you a thorough investigation of the efficacy of your products. It is quite possible that extremely interesting and useful data might be developed. This sort of research puts a real scientific foundation under your products which I am sure all will agree should be the basis for efficacy."

In commenting on a study of consumer buying habits conducted by National Family Opinion, Inc., Dan Rennick, editor of the American Druggist, stated that the facts that 28 per cent of shaving cosmetics are bought by women, and that 13 per cent of bath toiletries, 11 per cent of hand lotions and 10 per cent of colognes and toilet waters are bought by men, by saying that wives frequently act as purchasing agents for their husbands—and vice versa.

The fact that women buy 53 per cent of the hair tonics was said to be due to the fact that the women as well as the men make use of them. Another interesting statistic is that of all deodorant buyers, 21 per cent are men.

Other facts revealed by Mr. Rennick:

(1) Today, one-third of all women over 14 work outside the home—compared with only one-fourth of all women who did so 20 years ago. As a result, more

women have more money today to spend on cosmetics and toilet goods.

(2) Women belonging to families in the $3,000-to-$5,000 income bracket represented 30 per cent of the housewives covered by the survey. But, on 19 of the 20 products, the women in this bracket represented *more* than 30 per cent of all purchasers of the products. Bath preparations were the one exception.

(3) During 1952, the product which gained more new users than any other was skin creams—partly because of heavy promotion of hormone creams, aimed at the "mature woman" market. Mr. Rennick pointed out that "mature women"—those over 35—now constitute 60 per cent of all women over 14, whereas 20 years ago the corresponding figure was only 50 per cent. He noted also that women over 35 not only do more worrying about the condition of their skin, but also have more money with which to do something about it.

(4) Other products which gained new users during 1952 included hand lotions and creams, cosmetic lotions other than hand lotions, hair tonics and dressings.

(5) On 9 of the 20 products—including shampoos, shaving soaps and creams, and tooth paste—consumers definitely prefer the large size, very likely for reasons of economy.

(6) On 16 of the 20 items, the price range women prefer is the range from $1 to $1.99. The only product on which the preferred range is over $1 is perfume. On dentifrices, shaving soaps and creams, and nail enamels and removers—the preferred range is under $1.

(7) The most widely purchased toiletries are those which users started to use at an early age. On each of the following, for instance, more than 20 per cent of purchasers started using the item before they were 14 years old: Tooth paste and tooth powder, shampoo, talcum and dusting powder, deodorants, lipstick, hand lotions and creams.

(8) The average family buys 12 packages of tooth paste or tooth powder per year . . . 8 packages of shampoo . . . 6 of deodorant . . . 5 of hair tonic and dressing . . . 5 of hand lotion and cream . . . 4½ of shaving cream or soap . . . 3 of talcum and dusting powder . . . and 3 lipsticks.

The rapidly changing status of women in today's economy affects buying habits and sales strategy in every field, whether it be automotive, appliances, stocks and bonds, or toiletries, said Bee Strawway, of Time, Inc. In 1940, 5,040,000 married women, or 36 per cent of the nation's total, were gainfully employed. Ten years later, in 1950, this figure had grown to 9,273,000 or 52.1 per cent of the total. Marriage *and* career has become the rule for an ever increasing number, and even though not always employed outside the home, the modern woman is broadening her interests as never before. The result is an eager, enthusiastic demand for stream-lined living with no compromise as to quality . . . a ready acceptance of products no longer considered in the "luxury" class if—and this is a big "IF"—she is shown, and told convincingly, *why* she should buy. Male or female, the customer of today insists

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Aconitine, Agaricin, Arbutin, Arecoline, Asparagin, Aspidosperma, Atropine, Berberine, Brucine, Cantharidin, Colchicine, Digitalin, Digitonin, Digitoxin, Emetine, Ephedrine, Esculin, Eserine, Helonin, Homatropine, Hydrastine, Hydrastinine, Hyoscine, Hyoscyamine, Jalap Resin, Lobeline, Ouabain, Pelletierine, Physostigmine, Picrotoxin, Pilocarpine, Podophyllin, Powdered Extracts, Quassin, Rutin, Sanguinarine, Scammony Resin, Solid Extracts, Sparteine, Strophanthin, Strychnine, Yohimbine

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NATURAL ESTROGENIC SUBSTANCES
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"Metalsmiths"
Durable, Welded
Stainless Steel
STOCK
POTS

Other stainless utensils

Pails, measures, dippers, funnels, scoops, ladles, dye and starch buckets, shovels, beakers, batch can, etc.

Prompt Shipment Anywhere

Solid stainless steel thruout

"Metalsmiths" Stock Pots are made of heavy gauge, butt welded by the heliarc process. All welds ground smooth. Wired edge on top for increased rigidity. Fixed handles, rounded corner at bottom, free from crevices and wrinkles. Available polished or unpolished, with or without cover. 5 to 50 gal. sizes in stock—special sizes to order. Also available in 18-8 SMO Stainless. Let us quote on your needs for prompt shipment.

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568 White Street Orange, N. J.

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MASCARA
SUPPOSITORIES
STYPTIC PENCILS
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DIES
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upon knowing: "What will your product, or your service *do* for me?"

The Erno Laszlo Company, and Jules Montenier, Inc., were the winners today of the Charles S. Welch Memorial Packaging Awards presented at the luncheon on the first day.

The Laszlo Company won the award in the class for products selling at more than $1.00 at retail and Montenier in the class for products selling at $1.00 or less at retail. The award to the Laszlo Company was based on its line of plastic containers for their newly developed line of treatment cosmetics. This line consists of gray, specially molded plastic containers with black closure and trim. The award to Jules Montenier, Inc., was for the finesse Shampoo package which is an accordian squeeze bottle with captive cap designed for one hand operation.

Miss Phyllis J. Carter and William C. Griffin of the Atlas Powder Company, were presented with a $250 cash award sponsored by the CIBS (Cosmetic Buyers and Suppliers Association) by Robert A. Armstrong, President of CIBS, luncheon on the third day. This award was made to the best paper in the judgment of the Editorial Board of the Proceedings of the Scientific Section, given before the Section during 1952.

Ivon H. Budd, of Ungerer & Company, was the winner of the Cecil Smith Memorial Trophy at the golf tournament held the day before the convention opened. Paul Scott, of Carr-Lowrey Glass Company, won the B. E. Levy Memorial Trophy. And Dr. Eric J. Hewitt, of Evans Chemetics, Inc., won the B. M. Douglas Memorial Trophy. These were presented at the luncheon on the second day.

Davis Factor, chairman of the Board of Max Factor & Company, Hollywood, California, was re-elected president of the association. Vice-Presidents also re-elected were: Jean Despres of Coty, Inc., J. A. Ewald of Avon Products, Inc., H. J. Lehman of Wildroot Co., Buffalo, N. Y., and C. T. Lipscomb, Jr., Lever Brothers Company (Pepsodent Division).

Philip C. Smith, President of Yardley of London, Inc., was re-elected Treasurer and William F. Denney, Jr., President of Frances Denney, Philadelphia, Pa., Secretary.

The following Directors were elected for a 3-year term:

Charles N. Granville, of Angelique, Inc., Wilton, Conn.

A. E. Johnston, of Colgate-Palmolive-Peet Co., Jersey City.

J. I. Poses of D'Orsay Sales Co., New York.

Benson Storfer of Parfums Corday, Inc., New York.

Lloyd V. Young of Pond's Extract Co., New York.

L. B. Whitehouse, Sr., of Morton Mfg. Corp., Lynchburg, Va.

Directors representing associate members re-elected for another year were:

Peter L. Forsman of C. H. Forsman Co., New York.

M. Lemmermeyer of Aromatic Products, Inc., New York.

Cosmetic Chemists Meeting

(*Continued from page 765*)

with a few words describing each. There have been many attempts to decolorize the skin; the recent work on the para-hydroxyphenyl derivatives were particularly reviewed in careful detail. The attempts to impart color to decolorized skin were likewise summarized, with detailed description of the recent work with the furocoumarines.

Experimental Analysis of the Psychological Properties of Cosmetics

by Dr. Dean Foster, United States Testing Company, Hoboken, N. J. The importance and advantages of the psychological methods in the analysis and evaluation of cosmetic products were described. These methods of measurement focus attention on the consumer's reaction to a product, rather than its mere physical properties.

Psychological methods here applied may be psychometric or psychophysical, the former measuring properties of a given preparation in relation to desirability and the latter comparing its response qualities with its physical measurements.

The experiments described by way of illustration include problems with many representative cosmetic items—lipsticks, soaps, creams, hair preparations, shaving aids, and tooth paste.

The Application of the Biological Sciences to Cosmetics

by Dr. Lloyd W. Hazleton, Hazleton Laboratories, Falls Church, Virginia. Particular emphasis is placed on the basic concept that cosmetic chemicals are intended for biological application and hence subject to biological evaluation. Historically the development of cosmetic chemicals, in common with other classes, has depended upon trial and error in humans, or the folklore approach.

Rapid developments in chemistry and biology have tended to separate these two interrelated sciences at a time when close cooperation is most essential. Failure to adequately evaluate new cosmetics has not only stymied progress, but has introduced moral and legal problems.

The solution seems to be a broad research program for future progress and intensive developmental studies for current problems. Such a program will certainly benefit the industry and at the same time aid the cosmetic chemist in meeting his moral and legal obligations to the public.

The biological sciences will not be in a position to resolve all the problems with present methodology. The incentive provided by closely coordinated research and development programs in the cosmetic industry will, however, assure the continuing improvement of the applied aspects essential to cosmetic evaluation. With a combined program the cosmetic chemist and cosmetic biologist face an exciting future. Otherwise, we face a continuation of moral and legal stymie.

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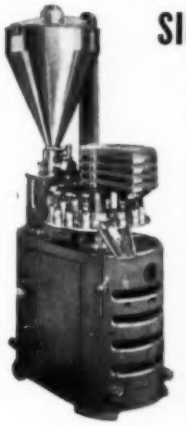

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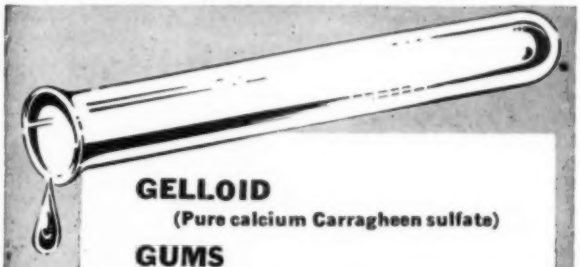

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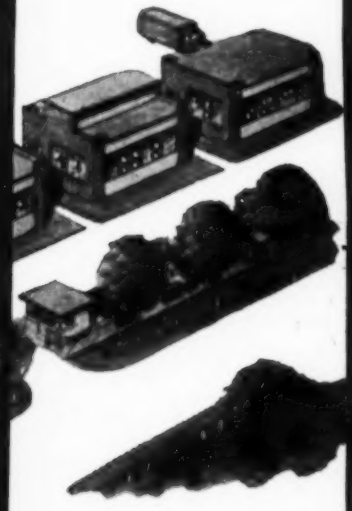

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